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EDITORIAL.

THE NEW YEAR.

The JOURNAL wishes you, and all of our readers, the happiest and most profitable New Years. We have in type many of the very best scientific articles which it has ever been our privilege to publish, and we are going to try to put on your desk the twelve best KENTUCKY MEDICAL JOURNALS which have yet reached you, during 1917. As in all of the efforts of life, however, some reciprocity is necessary, and we will have to ask you to help make this year a successful one, as the JOURNAL is yours in just exactly the same degree as it is ours. We are especially anxious to publish the minutes of every meeting of each county society, and in so far as we fail to do this in your county, your county secretary will be responsible. We are anxious to publish all the papers which are worth while which are read before your society. If they are mere compilations from the literature, it is rarely worth while to publish them, but the JOURNAL is anxious to receive all the papers based on the experiences of Kentucky Doctors. Especially, send us your good case reports!

To our advertisers, we wish to send a special measure of gratitude for their cordial and loyal support during 1916, and we shall endeavor to merit their further patronage during 1917. Our advertisers make the publication of so good a JOURNAL possible. Without them, we could not even buy the paper on which these JOURNALS are published. We trust every doctor in Kentucky, will make known to each of them the gratitude we feel for their continued support.

Let's all work a little harder to be better doctors during 1917. Let's examine our patients a little more conscientiously. Let's be a little more thoughtful in the diagnosis and treatment of their condition, and let's make our charges commensurate with our services, charging nothing where we do nothing, and

proportionately, increasing as we increase the values of our services, so that we make a living support for our families.

THE RECENT CONFERENCE.

One of the most important meetings which has ever been held in Kentucky, was the recent Conference of City and County Health Officers, in Louisville. The program was easily the best one that has ever been presented to our health officers. Every one present was agreed that it was not near so important, however, to the health officers as to the medical profession and people of the State.

Amongst the matters presented, was the address of Dr. J. W. Trask, Assistant Surgeon General, of the United States Public Health Service, of Washington, D. C., on the importance of morbidity reports. As a result of this conference, and of the requests from every part of the State, from our county societies and lay organizations interested in health work, the State Board of Health announced that it would establish a system of morbidity reports for preventible diseases as soon as practical methods could be worked out. Many other states have secured more or less reliable morbidity reports earlier than we have in Kentucky. The delay here has been because we did not wish to begin the matter until it could be handled effectively and so this branch of the work could be on a par with the other departments which have such high standards of efficiency. The details will be published from time to time and we are sure they will be received with interest by the profession of the State.

All those in attendance enjoyed the visit and address from Dr. John F. Anderson, who, until recently, was the Director of the Hygienic Laboratory of the United States Public Health Service, at Washington, and who is now in charge of the Biological Laboratories of Squibb & Company, New Brunswick, New Jersey. All of the biological products used under the supervision of the

health departments in the various cities and counties of Kentucky, will be manufactured under Dr. Anderson's supervision. Arrangements have been practically completed for biological depots in each county, several in some of the larger counties, so the diphtheria antitoxin and other biological products of this well known firm will be readily available for the profession.

One of our most distinguished visitors, was the Secretary of the State Board of Health of Kansas, Dr. S. J. Crumrine. Dr. Crumrine delivered an address full of valuable suggestions. We are sure that these will be repeated to the doctors and people all over Kentucky throughout the coming year.

It is with pardonable pride that we say, that all those who were present were agreed that the most practical suggestions that were made, came from the efficient heads of departments of our own State Board of Health. Doctors Heizer, South and Curry were constantly giving those in attendance the benefit of their accumulated experience and their suggestions, as modified by the effective health officers, were of the greatest value. Elsewhere in this issue, we will publish Dr. Heizer's address, and we trust every one will read it. It is the most comprehensive health program we know about, and we trust that it will be put in effect not only in the campaign against tuberculosis, but in the entire campaign against preventible diseases in each progressive Kentucky county.

A VALUABLE DIGEST.

The JOURNAL takes pleasure in announcing the receipt of a special number of Mulford's Digest, commemorating the Twenty-fifth Anniversary of this company. It contains many of the most valuable biological papers we have read. We are sure many Kentucky doctors will be glad to see this interesting issue and will write for it. The Mulford Company, is one of our best, and we are sure the doctors of Kentucky will be glad to keep up with their scientific progress.

BIRTH CONTROL.

The chief argument of the birth control propagandists seems to be, that fewer children would mean better children physically, mentally and morally.

The history of nations does not support this contention. Tacitus in his history of Germany written about the end of the first century of the Christian Era, says of the Germans: "To restrain generation and the increase of children is esteemed an abominable sin." It appears at that time that this was an historical condition with them which has been maintained ever since.

As would naturally follow, chastity of her women was practically universal, for he wrote again: "To a woman who has prostituted her person, no pardon is ever granted."

The very opposite seems to have been the custom of the French people, as their birth and death statistics for the past century so well show. Compare the virility and the mentality of the two nations for the past fifty years and the argument of the birth control propagandists loses its potency.

Morally they appear to be about the same from a civil standpoint, as the doctrines of the German Nation to-day are about the same as those of Napoleon a little over one hundred years ago. E. A. S.

MALARIA.

The profession of the State is receiving regularly, quarterly, an addressed card from the United States Public Health Service, at New Orleans, making inquiry as to the number of cases of malaria which we have treated. At the Hopkinsville meeting, we discussed with a number of our members, the reason so few replied, and we found that a general misapprehension as to the necessity for reply exists. If you have treated no cases, indicate this on the card and mail it. Most of our physicians seem to think that there was no necessity for returning the cards, if they had had no cases of malaria. This investigation is of nation-wide importance and its accuracy depends on the number of reports received. For the quarter ending September 30th, 3,500 cards were mailed and 375 replies were received. These represented 98 counties and 191 towns or cities. One thousand seven hundred and fifty-one white cases and three hundred and seventy-one colored were reported, making an average of a little more than one case to every physician reported per month. Malaria is getting to be one of our great problems, and we need the help of every thoughtful citizen of the State in getting rid of it.

USEFUL DRUGS.

The best book that has come to our desk in many a day, costs ten cents. It is a "Pocket Dose Book of Useful Drugs," prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. The larger book, of which this is a compendium, costs fifty cents. Many other state medical examining boards, besides Kentucky, are eliminating their examinations on Therapeutics to this list of drugs. In the larger book, the properties, pharmacologic action, therapeutics and dosage and methods of administration are briefly but practically discussed. Every practicing physician should secure one of each of these books

from the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

In this connection, it will be of interest, especially to those of our physicians who are fortunate enough to be called in consultation frequently, that the family physicians of the State are noting with both interest and regret that many of the patients referred to our leading consultants are given prescriptions for proprietary remedies, of whose content and physiological action the prescriber is as ignorant as he must be of the patient's ailment. We recently heard a progressive practitioner in Allen county, say that one of the leading internal medicine men in the metropolis of our State would never see another of his patients if he could help it, because he had recently prescribed panopepton for an interstitial nephritis! It is important for the leaders in therapeutics to know that the doctors are watching them, and they must look to their laurels, if they hope to retain them.

DR. KARAGIOZIAN.

The newspapers have already carried the notice of the revocation of the certificate to practice medicine in Kentucky, of Dr. John Karagiozian, of Louisville, by the State Board of Health. This follows the recent revocation of the certificates of Doctors A. Aratus, of Covington, and P. R. Peters, of Louisville. Our State Board of Health is determined to rid the State of every practitioner who is prescribing or dispensing opium or cocaine or any of the salts of either "for purposes other than legitimate use." It has announced over and over again that it considers the treatment of habitues, of either of these drugs by what is known as the gradually diminishing dose method, outside of the institutions where the patients can be absolutely controlled, as "grossly unprofessional or dishonorable conduct of a character likely to deceive or defraud the public." It must be understood that the State Board of Health does not desire and it would not have the power to decide upon the treatment of any disease, but cocaine and morphine habitues are not diseased, and it is a violation of law in Kentucky, to furnish them with these products, unless they have an incurable malady which demands it. Dozens of our best doctors have found that these cases are immediately cured if the drug is absolutely withdrawn from them. Physicians who dispense these drugs, for other than legitimate use, do it at their peril.

SCIENTIFIC EDITORIALS.

EXTERNAL SYMPTOMATOLOGY AND TREATMENT OF ADDISON'S DISEASE.

The correlation of skin and internal diseases is becoming so apparent that the dermatologist is often compelled to treat diseases that are not by any means limited to the skin. In fact, if he should refuse to treat skin lesions that are due to internal disorders, general infections or constitutional conditions he would have to limit his practice to those dermatoses that are of parasitic origin, a group which makes up only 15 per cent. of all skin diseases.

It is rather unfortunate that the laity and even the profession consider the skin as a covering only; they forget that the skin is a very important organ with secretory and other function of its own; it is not only a protection against infection from without, but also suffers from infection from within, such infection often expressing itself in a way that is of great value from the diagnostic standpoint. Skin reactions to internal conditions are often seen in uterine disorders, nephritides, infestations of the intestinal tract, diabetes, leukemias and pseudo-leukemias, disturbance of internal gland secretion, septicemias, etc.

One of the forms that such reaction of the skin may manifest itself is pigmentation. This is due as a rule to some disturbance of metabolism. It may be general or localized. In chloasma uterinum partial pigmentation occurs, in jaundice it is almost always general. The different forms and shades of pigmentation should be carefully studied. One of the writers of this editorial once mistook the pigmentation of pernicious anemia for that of jaundice, which, though regrettable, certainly taught him the necessity of carefully differentiating the various pigmentations. There is quite a difference between the lighter shades of pigmentation seen in jaundice and the darker and more brownish shade of pernicious anemia. Any doubt as to the differential diagnosis between the two may be cleared up by an examination of the blood.

In Addison's disease, unlike chloasma uterinum, the pigmentation may be general, although it is often only partial. The pigmented areas shade off rather slowly into the surrounding unpigmented skin, so that there is no definite line of demarcation. The pigmentation is usually more marked on the face, neck, groins and scrotum, with the axillae and nipples next in depth of color. The hair is usually coarse and dark. Dark or grayish-brown patches may be found on the mucous surfaces of the lips and mouth and often occur on the skin adjacent to these areas. Where

the skin is stimulated or exposed to the light the bronzing is usually intensified. Microchemical staining of sections of the pigmented skin will show that the pigment is iron-free, an important differentiation point between the pigmentation of Addison's disease and that of other conditions.

Since most general practitioners have a fairly good conception of this disease we will not dwell further on the symptomatology, except to call attention to two symptoms that should especially warn the physician in any ease of skin-pigmentation, and that is asthenia and rapid, feeble pulse.

We have often been asked to give a description of the treatment of Addison's disease from the dermatological viewpoint. Our plan of treatment may not appeal to every practitioner; yet, some may find points of benefit therein.

One of the most important factors, we consider, is perfect physical rest, strict diet, absolute prohibition of alcohol, regulation of the bowels and free diuresis. In pregnant women, artificial induction of abortion is indicated unless the disease yields readily to the administration of the specific organ extract. Pregnancy is frequently the cause of changes in the suprarenal glands—in fact, there is always some change in these glands due to pregnancy—and some authorities believe that the vomiting of pregnancy is due to such changes. It is very important that the patient be protected against exposure to infectious diseases, since their resistance is very low; the germs from a mild pharyngitis or tonsillitis, transmitted to a person suffering from Addison's disease may readily cause a generalized rheumatic infection of frank septicemia. One should endeavor to give the patient all the protein he needs for body maintenance in the form of vegetable-protein or as milk and eggs, restricting meat and fish to a minimum; nor should meat-broths be given, since these contain nearly all of the harmful extractives which render the meat harmful without containing much of the nourishment which gives the meat its value. All those substances which have been found through experience to be irritating to glandular epithelium should be forbidden; at the head of this list we place alcohol, as the most irritating of all, then spices, meat-extractives, vinegar and those drugs, formerly very much employed, but fortunately falling more and more into disuse, such as buchu, turpentine, copiba, cubeb, santal oil, and others of the so-called "genitourinary stimulants." Diuresis should be obtained by the free drinking of water and alkaline citrates and acetates in moderate doses.

As to the administration of drugs, organotherapy, of course, holds first place, with various preparations of the suprarenal gland.

Where the whole gland is to be given one should obtain the glands from young animals, preferable calves, immediately after they have been slaughtered; the dose is 1.5 to 2 grams per day, increasing gradually until the daily dose reaches 5 grams, or even more when proper results are not obtained from the more moderate doses. Behlere advocates as much as 25 grams daily, that is, nearly an ounce. It is more convenient, and usually more efficacious, to use the dried and powdered preparation of the gland in doses of about 1 or 2 grains three times a day, increasing gradually until the daily dose was about 1 gram or 15 grains. The solution of the active principle is hardly suited for administration by mouth since the suprarenin is destroyed by the action of the digestive fluids before it has been in the stomach many minutes; thus, one gets a slight and extremely fugacious action, instead of the continuous entrance of a sufficient amount into the blood-stream, which is the natural action of the gland and what we are trying to imitate with the artificial administration. Intravenous or subcutaneous injection of suprarenin or adrenalin solutions bear the same objection, the action is too fugacious. When the drug is given by injection, —and even when given by mouth the same thing is true,—it is better to give frequent small doses at short intervals, so as to have a small amount of the drug in the blood stream at all times, rather than to give a few large doses a day, which gives an over-supply for a short time and an under supply most of the time.

The organotherapy should be tried for months before being abandoned. Even when successful it should be continued for a long time and the administration resumed if the withdrawal causes any relapse or untoward symptoms. There is usually a decided rise in the blood-pressure, which may have fallen tremendously before the administration of the gland was started. The darkening of the skin may clear up remarkably, under the organotherapy, but this is not the rule; the pigmentation that has already established itself tends to persist even when all the other symptoms have cleared up, which is probably due to the fact that the pigmentation is caused by changes in the symptomatic nervous system. The muscular weakness, however, often yields readily to the medication, the intestinal and gastric disorders also; the abdominal pain and the vomiting require no other treatment, although in cases where the improvement is slow, or where the suprarenal glands fail to affect the patient, hot and cold compresses over the painful areas and epigastrium are both grateful and harmless. Other drugs should be used with great caution, especially strychnine, arsenic, mercury, phosphorus and

thyroid preparations. Also, the tendency of large doses of suprarenal gland substance or extract to cause glycosuria should be remembered and the urine examined at intervals.

Where tuberculosis or syphilis of the suprarenal glands are suspected, the treatment must be not only with suprarenal gland substance for present symptoms, but for the constitutional disease as well. Lues, affecting the suprarenals should be treated much the same as lues elsewhere, except that perhaps it would be better to rely more upon the salvarsans and give less mercury, since the last mentioned organ seems to suffer more from mercurials than other organs. Tuberculosis must be treated in a general way unless restricted entirely to the suprarenal glands. In that case surgical removal of the gland or glands affected would be sufficient, but if there is pulmonary or other involvement there seems to be no cure except the "fresh air and good food" treatment. Where there is a tumor or infection of the gland or adjacent tissue surgical treatment is indicated; where an operation is necessary chloroform should not be used as an anesthetic, since it seems to be responsible for some cases of Addison's disease which have followed chloroform anesthesia.

M. L. RAVITCH and S. A. STEINBERG.

Modern Treatment of War Wounds.—Gaultier has been studying with the microscope during the last four months the clinical evolution of wounds under the various methods of treatment in vogue. His research has confirmed the assumption that every war wound is infected to start with, and it has further demonstrated that the clinical findings, the aspect, etc., are not enough to tell what is going on in the wound. Its course cannot be estimated without the aid of the microscope, and this is an essential element in Carrel's technique. The originality of his method consists in constantly renewing the disinfectant used, ensuring that it reaches every point of the wound, with repeated bacteriologic control. This shows the exact moment when it is safe to close the wound, and this hastens the healing immeasurably and restores conditions to approximate normal much more completely. Gaultier gives an illustration of his impoverished laboratory such as can be fitted up anywhere in connection with a surgical service, with a microscope and some slides and stains. He was unable to give Delbert's pus-culture method a thorough trial as the wounds healed without suppuration under the Carrel treatment, and no pus could be obtained for examination.

ORIGINAL ARTICLES

A COMPREHENSIVE PLAN FOR CO-OPERATION OF THE STATE TUBERCULOSIS COMMISSION WITH EXISTING HEALTH AGENCIES.*

By W. L. HEIZER, Bowling Green.

STATE REGISTRAR OF VITAL STATISTICS.

In the absence of police power, with a small appropriation and limited by the statute creating it, the work of the Tuberculosis Commission must necessarily be educational and cooperative rather than administrative. Its usefulness, therefore, will be bounded by the degree of help which it can obtain from the various political and social organizations which have to do with the education of the people; by the work which it can initiate and execute, and by the augmented influence for good which it can give to the various activities in their interest of the health, lives and social welfare of the people. Its work must be non-partisan, non-religious, and altogether altruistic, and its influence must be such that when its representatives visit a community, they will be met by a united public sentiment without a justified hint of ulterior motives, wrong purposes or ill will. Like the ministry, our educational system and the family physician, the relations of the Commission with the people are close, confidential, and must be respectful, almost sacred, for it has to do with their dearest possessions, the integrity of the home in the maintenance of the family circle, their health and their lives.

With these aims, and this conception of its functions, the Commission is in a position to approach the official head of every such educational or allied institution, with the right to expect a cordial welcome, and ask for the privilege of doing supplementary and cooperative work.

In this paper an attempt has been made to outline the various activities which the Commission may adopt and which seem to be practicable, the limits to which each may be carried, however, to be limited by the degree of cooperation secured, and the appropriation available.

Unquestionably the most productive work of the Commission ought to be done through the schools. This should begin with the State Superintendent of Public Instruction.

With his help, there could be placed in the teachers' institutes "Course of Study," special articles dealing with the care, cure

*Read before the Conference of the City and County Health Officers, Louisville, December 15, 1916.

and prevention of tuberculosis for the use of the teachers, and, also, graded lessons in the elementary study of the disease, for pupils. By State regulation, the teachers of the State could be required to give a definite course in the prevention of this disease and the Commission could supply the text for the work. By State regulation, also, it could become unlawful for boards of trustees to employ tuberculous teachers or to admit children infected with this disease into the school. The State Superintendent also has it in his power to prescribe and enforce regulations to provide the kind of school houses that will insure proper heating, adequate ventilation and reasonable sanitation. From his office can be secured at any time the names and addresses of all the teachers of the State and special bulletins can be mailed them by the use of his equipment. Arrangements for lectures by representatives of the Commission can be made through him for teachers' institutes, district teachers' associations and Kentucky educational associations.

The County Superintendent of Schools should be asked to assist in the arrangement of lectures at school houses and at his institutes, and to do cooperative work with his teachers. He can be of active assistance in the formation of "Health Leagues" and in the distribution of the Commission's literature to his schools.

The help of the Boards of Education should be secured to enforce a regulation by the State Superintendent to prevent tuberculous teachers from holding positions and infected pupils from being admitted to school; to seek and secure health work in the schools. Illustrated lectures and health talks should be given the pupils. Demonstrations in heating, lighting and ventilation should be made in the school room and the rules and regulations of Boards of Health and the laws of health should be enforced.

The greatest amount of good can be done by the teachers and nothing should be left undone to give the teacher a knowledge of the conditions that cause so much tuberculosis, the preventive measures concerning it, and in the management of it in the school and in the home. This should be done by means of special tuberculosis and health bulletins mailed regularly and by constant appeals to the teacher to keep this subject alive in the class room. By graduated courses of study, the teacher can be of great value in the formation of "Health Leagues" in the school and in the district, and as the official representative of the Commission, could get literature in the homes of the pupils and arrange for good audiences at lectures. The school is one of the best places for creating sentiment for district sanitarium, and the teacher can use her influ-

ence to secure adequate legislation when needed; also special benefits for tuberculosis work can be arranged by the sale of Christmas seals. The teacher should aid in examinations of school children and in making sanitary surveys of the district.

The State University and especially the Normal Schools should be asked to cooperate with the Commission, and opportunities secured to lecture to the hundreds of teachers of the State who attend these schools. These lectures should be so arranged as to present the extent of the problem, the urgent need of their cooperation and the precise and detailed information to meet it. Preliminary steps should be taken for the organization of County Health Leagues in the many counties represented at these institutions.

Almost of equal importance as the cooperation of schools can be made the work of the Commission with the State Board of Health. This body is closely associated with approximately 3,500 physicians of Kentucky, 2,500 local registrars of Vital Statistics and deputies, and many thousands of other organized citizens interested in public health work. With their help, a complete tuberculosis survey of the State can be made. Their help is invaluable in enlisting public support. The physicians can make or destroy the public health nurse and the aid of these people in their communities in securing appropriation from fiscal courts or City Councils is invaluable and their working interest assures a permanent organization. Too frequently it has been found that physicians do not give their entire cooperation to the district nurse and steps should be taken to remove this deadening tendency.

With proper cooperation it is entirely possible for the Commission to secure all the necessary printing of bulletins, leaflets, school literature and placards because the work of the Tuberculosis Commission is part of the duties of the State Board of Health.

In obstinate cases, the district nurse finds that she is powerless to remedy certain unsanitary conditions which she finds. In some cases where unsanitary conditions are suspected, and she is forbidden the privilege of making visits to the home or to the premises where such conditions are suspected, it is within the power of the State Board of Health to appoint the visiting nurse as deputy sanitary inspector with the right to go upon any premises or property in the Commonwealth for the purpose of making a sanitary inspection. Such conditions, when found, can be reported either to the County

Health Officer, or to the State Board of Health, and the police power of the State can be invoked to remedy an otherwise hopeless situation.

The State Board of Health has hundreds of dollars invested in office equipment, such as letter-folding, addressograph and multigraph machines, with thousands of addressed plates of organized public health workers in every section of Kentucky. The Commission, to do the kind of educational work outlined in this paper, would have to have similar office equipment, and by close cooperation there is no reason why the Commission should not use this equipment. In addition to these advantages, there would be that of concerted action so that the joint force of the Board and the Commission could be centered upon the solution of a single problem or emergency, should they arise, and there would be an avoidance of duplication of work and expense.

The third line of activity could well be named "Public Propaganda." This would involve publication by the Commission of a large number of bulletins and the distribution of literature throughout the State by its organization and the supplying of special educational articles to the public through the press.

The consent of the public press should be secured to give wide publicity to the tuberculosis campaigns; the announcement of special "Tuberculosis Days;" the sale of seals; to print special articles written by the Commission, and, especially, should they be asked to lend an invaluable influence in their editorial columns.

Bulletins and literature should be supplied regularly to State and County officials that they may be kept in touch with the problem to the end that when appropriations are asked for, they would be informed as to their need. Too much value can not be placed upon the help from social organizations, particularly the Women's Clubs, Y. M. C. A., and the ministry. Through them public lectures may be given to large, representative audiences, seal sales can be handled, benefits given and sentiment created for employing nurses and getting appropriations; legislation can be influenced, the aid of picture shows can be secured in showing special films, giving benefits, or in showing slides furnished by the Commission to their audiences which can be reached in no other way; special sermons can be delivered and successful means of distributing literature provided.

The Secretary should be instructed to affiliate with national organizations, and to take such steps as to secure their influence and resources in the solving of the problem in Kentucky. Exhibits should be prepared and shown at the State Fairs, and teachers'

and health officers' meetings. Special moving pictures and slides should be shown where ever practicable.

One of the most important endeavors of the Commission is the work done by its nurses and the district nurse which it is instrumental in locating in a community. There should be two or more splendid nurses who can deliver effective lectures and do intensive nurse work in the campaigns to secure local district nurses and district sanatoria. In addition, the Commission should exercise a supervision of the nurses which have been placed through its efforts. The District nurse should make sanitary surveys, do home visitation work, make school examinations, report unsanitary conditions to the Health Officer, and be clothed with the authority of State Sanitary Inspector so she may invoke the police power in obstinate and deserving cases.

The district nurse is probably the most effective agent which the Commission has at its disposal, and her life, her duty and her work should be such that her entire community becomes alive to public health needs and educated in disease prevention and control and she should be thoroughly imbued with the idea that her work is but a preliminary step towards the organization of a complete public health service, with a well paid all-time county health officer at its head and county and district nurses as his assistants and her influence in the community should be used and made so effective that the accomplishment of this reform may not be delayed, but hastened. Because of her faithfulness, the death rate from communicable diseases can be reduced and the lives and health of the people can be saved. The kind of nurse which should be placed in the district is rare and to meet the growing demand as a result of the work of the Commission, it should be arranged to give lectures on social service work in the larger hospitals and select such nurses as seem to be fitted by temperament, desire and character, and give them special training in social welfare work in the cities where such hospitals are located under the supervision of one of the Commission's State nurses. It should be an easy matter to get the consent of the hospital superintendent or of the governing board to do this special training for those who desire it. In this way, the Commission would have in a few years a supply of selected and specially trained nurses who had previously chosen this line of endeavor.

Another line of usefulness of the Commission would be found in the creation of county and district sanatoria for the care and treatment of tuberculosis. The law defines the duty of the Commission in this regard, and it should select the districts where campaigns should be made for such hospitals, and should

arrange the campaigns and send a sufficient number of workers into the field to create and maintain enough public sentiment to provide for the tuberculosis district and the building of the hospitals and its adequate maintenance, and it should exercise a careful supervision over its affairs to see that it meets the needs of the people.

Another suggested line of activity of the Commission would be a general correspondence school. As a result of the State Survey which could be made on the State "Tuberculosis Day," widely advertised in advance with all the organizations ready for that particular work, the name and address of the victims of the disease could be secured. They should be listed by counties and checked over from time to time with the death certificates received by the Bureau of Vital Statistics. Morbidity and mortality rates could be determined with a fair degree of certainty and through an advisory department each could be mailed a specially prepared bulletin on the "care and treatment" in the home, and this bulletin should encourage personal correspondence with this advisory department. The particular problems involved in the care and prevention of the disease as a result of this correspondence could be met by special circulars or bulletins so the Commission would be in position to do cooperative management of certain cases by means of the State and District nurses in the homes where infected individuals live, and it might be sanitarium treatment could be provided, home instruction given or arrangements made to cooperate with the county health officer in the disposal of the tubercular pauper and advise with the medical attendant when he desires it.

One of the most responsible duties which the Commission has to perform is in the line of its official activity and in the coordination of these forces. It should be the duty of the Commission to exercise general supervision and enforcement of the law in the outlining of its policies and the adoption of its plans in looking after its finances and especially in the selection of a competent Secretary who should have the selection and control of his employees, and he should be delegated to execute the adopted plan of the Commission in the wisest, most economical and most effective manner possible. It should delegate wide discretionary power to the Secretary to do its work. This sort of program would insure efficiency and loyalty on the part of the employees of the Commission, would enable the Secretary to use his power of initiative and execution and make the work of the Commission really effective. In the selection of the Secretary, and the giving to him the power of execution, the Commission faces the gravest responsibility, for if it should select a Sec-

retary who is incompetent and give him this power, its work is valueless and may be distinctly harmful. If it elects a Secretary and does not give him this authority to act, its activities will be misdirected, mismanaged and made impotent and its Secretary useless.

It would seem from all the requests and the appeals for cooperation which have been outlined in this program that the Commission has been in the act of receiving aid, but in this act of receiving, it is also engaged in the work of giving, for by its activities, the school system of the State can be made more effective by giving to the people through the teachers and their superiors the kind of information which will make the school system of greater value in meeting the problems of the State. Under the past and present methods of teaching and as a result of the things not taught, about one funeral in every seven is caused by infections of tuberculosis, and nearly one-half of all of the deaths in the State as a result of ignorance, carelessness or indifference, is caused by diseases which are practically preventable. In receiving aid from the State Board of Health, the Commission likewise gives to it the benefit of its influence, organization and experience in solving one of the most important phases of the public health problem in the State and helps to make the work of the Board of Health more valuable. In receiving aid from the public press, Women's Clubs, the ministry, State and county officials, and other organizations, the Commission is giving to them increased usefulness and a wider range of activity and helping them to accomplish the very tasks for which they were created so that the Commission need not feel a sense of obligation for favors received, but can feel a pride and satisfaction in being able to assist them in their good work.

Trench Diarrhea.—Rathery and Bisch relate that emetin has a surprisingly favorable action in trench diarrhea. This sustains the assumption that the trouble is actual dysentery, and this was further confirmed by the discovery of abscesses in the liver in four of their cases. The clinical picture was that of ordinary dysenteriform colitis dragging along from one to four months, and no amebas were found in the stools or pus from the liver. Two of the four men had lived in northern Africa but the others had not. Roentgenoscopy gave instructive findings in each case, showing in one an accumulation of fluid both below and above the diaphragm, the abscess in the liver being accompanied by a pleuritic effusion. The men all promptly recovered after evacuation of the abscesses.

TRAINING PHYSICIANS FOR SOCIAL HEALTH WORK.*

By P. E. BLACKERBY, Erlanger.

The possibilities of disease prevention which has arisen as a result of continued effort on the part of the National and state health forces has brought about intelligent endorsement and cooperative activity on the part of all the educational bodies throughout the country and with this is created, naturally, a demand that the medical profession officially, and individually be in the forefront of the battle to elevate the standard of living and make longer life and better health a reality as well as a possibility, to this end it behooves every physician in small town and large to prepare himself for a large part in this work. Being a part of a progressive profession makes it incumbent on him to be, himself, progressive.

Society for its own betterment, is reaching out and giving impetus to every movement that spells advancement and progress, and today stands ready to listen to the advice and test the suggestions of the medical man in her midst.

In order to inspire a wholesome respect for public health as a sociological problem, it is essential that the physician look to himself first, his personality, his ideals and his equipment. Constant contact with humanity in public life and in home usually gives him that easy manner and self possession that makes way for a broader development in his personality, but even so we quite frequently find him lacking in that, greatest of all essentials, tact. The ability to make a friend see an error and cause him to want to correct it without giving the impression of butting in. So many have been trained in the school of "hard knocks" that they become blunt mannered and find it hard to meet the situation other than forcefully, when oftentimes a little tact would bring far happier results. However, we believe that most of our profession are gifted with the qualities of grace and tact and need little training for these requisites. In his ideals, the doctor goes through a transitional experience. On leaving school he is filled with the ideals that a great future is in store for him and his ideals are lofty. But a few years of experience in trying to meet the world's demands transform him into more or less of a skeptic and he loses a great deal of his former ideals and sometimes too easily falls into the habit of working only for his material welfare and lets the public "go hang." Still his attainments make him respond to the call to keep

his profession on a high plane and he finds it easy to keep in touch with every advancement. And now that we are considering him for a part in the work of teaching how not to become sick and thereby to an extent creating a condition of lessening his own resources we find him often constrained to hang back and wonder where he comes in. What is society going to do for him in return for so unselfish a contribution? This question looms large on his horizon and to a great extent must be answered before he can consent to wholly giving up to this new order of public health education.

We believe that the result of the medical profession's unselfish contribution to public weal will be an inspiration to society and state to make provisions for material returns for this sacrifice and already we are seeing the idea of health insurance being tested in different states. There is no question but some practical legislation must result before we can expect the physician to become a unit of efficient endeavor in this great work.

In consideration of his equipment for the work we revert to our subject: What training is necessary? We shall try to answer this question in a discussion under three heads: "Medical School Training," "Medical Society Training," and "Individual Training."

While a good many, yes, most all of the class A schools are giving a technical course for the degree of Doctor of Health, we believe that all medical schools ought to train their students in the essentials of health conservation. A study in comparative vital statistics should be a part of the course in disease prevention in every college. This would give them a knowledge of what diseases predominate in different localities and inspire him to give special attention to preparation for meeting those conditions as he contemplates his future location.

A thorough knowledge of infant and child mortality is necessary to incite the student of a careful study of how to conserve these lives. He wants to be impressed that the knowledge of infant feeding must be practical for in this field alone is the greatest hope of adding to the average of human life. The student should be made acquainted with the fancies and superstitions of the average person as regards the contagious diseases. That a little common sense and not asafetida, buckeye or horse shoes will keep away the catching diseases. That the use of this common sense is just as necessary in the spring and summer as it is in the fall and winter. That at no time is a "catching disease" necessary but that at any time it is a drain on the child economy that may pave the way for a more serious condition. To incorporate a broad knowledge of health conservation into

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the training of the average medical student it is necessary that the teacher be possessed of a practical as well as a scientific knowledge. Happily in Kentucky our schools are taking advantage of the kindly offices of the State Board of Health and each year the State Sanitary Engineer, the Registrar of Vital Statistics and other of the forces are conducting a series of lectures and demonstrations that will go far toward making the graduate more efficient.

Here in Kentucky, we look with pride, on the progress of medical organization and see in the county medical society a growing tendency to take up a mutual study of these questions of better health and more efficient community life. Just as his work in the county society makes him a better physician, so does it make him a better citizen. Those who are active in their attendance at their medical meetings are the doctors who make the work of the health officers easier. The press and the public are always ready to quote resolutions and utterances of the medical society and this fact is an inducement to everyone to have a part in every good movement of his county organization. One meeting each year should be given over to a discussion of the health and social needs of the county, and every good paper given to the local press. This would not only be of inestimable value to the community life but would bring about a recognition of the doctor's interest in his people as a whole, rather than as a patient. We believe that medical organization in the South spells greater possibilities for training in social health work and makes it easier for the doctor to adapt himself to these needs in his community. Joint discussion of these problems with other social and educational organization has already gone far toward establishing a mutual program for community growth and the physician is constantly being called on for leadership in his field.

To summarize the needs in his community for health betterment, that the physician must meet, we will try to cover it briefly: No disease should become epidemic. To avoid this, soil pollution should be prevented, all communicable cases isolated, and every known method utilized to destroy the disease seed harbored in the sick and convalescent patient: To prevent soil pollution, every doctor should acquaint himself with the modern means of destroying human excreta. He should be thoroughly familiar with the details of constructing a Kentucky Sanitary privy, the peer of all devices in the control of typhoid, dysentery, hookworm and allied ailments. The doctor can contribute no greater good to his community than to see that every home is supplied with one of these necessities. To see that no exanthematous dis-

ease becomes prevalent requires careful and tactful surveillance of the home and school life. To be free to do this the physician must have placed his services at the disposal of school authorities, trained his people to seek his advice, and by his public spiritedness have aroused a deep consciousness of the right of all to be protected from disease.

Individual responsibility is the keynote in the prevention of tuberculosis and all other communicable diseases and no one is in position to fix this responsibility and govern the conduct of the individual like the family physician and happily for the good of the cause we find him rising more and more to the occasion.

Individual training for social health work will result from a careful study of the needs in the community and from the experience in attendance upon the sick room. The physician in order to impress the public of his desire to have a better order of things, must, like charity, begin at home. He can not expect the attendants on his patients to practice caution in the sick room when he neglects those principles of prevention himself. Cleanliness of person, of everything that is used, contact with patient, in careful speech in giving advice makes way for respect for his opinion. The habits of some doctors in their personal ministrations and the insanitary conditions about their homes makes a serious handicap for any health service in the community. We recall an experience in our work in the past two years. We were asked for an illustrated talk before a gathering of teachers somewhere in the State; we talked at some length on home sanitation and personal habits in disease prevention. In a short discussion after the meeting we were cited to an instance where a leading physician in that community had been seen by a teacher to take a hypodermic syringe from his pocket wipe the needle on his coat sleeve and plunge it into the arm of a working man without any preparation. There were no homes that spoke as little for sanitation as did that doctor's home. Such a man could never be trained for any social work but rather would be a hindrance to the efforts of others. However, these birds are becoming a rare species and in his place will soon be found the real man of to-day, the physician who combines a knowledge of how to treat the sick with a skill and tact in dealing with every vital problem of health that confronts his community. This doctor knows how to have a large part in the social growth about him, without at the same time breaking any of the rules of ethics of his profession. He can carry with him wherever invited, to the school room, the church, social and welfare organizations and into the home such a knowledge of how to lift his people above the

traditions of old as regards disease, of how to curb the spread of infectious diseases, the necessity for better morals among the young. that a stronger race might result, and in every way be a vital factor in the community life, to this he will add that earnestness of purpose that will invite hearty cooperation for the work.

From the "Doctor of the Old School" to the present day trained expert in medicine there has emanated more real humanitarian greatness than from all other sources combined and this fact is witnessed both in history and in fiction, but most of this has resulted from his efforts to relieve the sick and distressed and allay the hand of death. However, with the new era of economic existence where conservation bids for the center of the stage, cold reasoning and sound judgment is displacing sentiment and the halo on the head of the physician in the sick room is laid aside to make room for a crown of achievement in making life longer and happier by giving to his people a knowledge of how to keep well.

DISCUSSION.

T. A. Frazer, Marion: Mr. President, Ladies and Gentlemen: There will be no subject before this meeting of the State Medical Association that will have a more far-reaching effect for good than the paper of Dr. Blackerby. The day is not far distant when the specialist in preventive medicine will be recognized as one of the greatest specialists of the profession, recognized as one of the greatest factors for good in our social life. We have got, in the beginning of this work, to combat all the ignorance and superstition of the ages gone by, not only the ignorance and superstition of the laity, but the ignorance and superstition, I am sorry to say, of many in our own profession. It is a sad commentary that we have many physicians to-day who are doing what Dr. Blackerby spoke of, plunging a hypodermic needle into a dirty arm. A nurse told me not very long ago that she had prepared an arm to give a hypodermic; the attending physician took the syringe from her hand, pulled down the sleeve, plunged the needle through the sleeve into the arm in another place after she had cleansed it with alcohol and had properly prepared it. There are many physicians who do not attend the meetings of this Association, and fail to grasp the great work the doctors of Kentucky are doing. We have got to do a great deal of work along special lines. This is an educational matter. We have got to reach the laity; we have got a number of laymen who are doing some of the work of our profession in preventive medicine. The intelligent layman is to-day demanding of the physician to tell him how to keep well; to tell him how to keep his wife well; how to keep his boys and girls well; he is demanding of him to tell how to prevent epidemics among the chil-

dren of our schools and it is a sad commentary on Kentucky to-day, as well as on many other states, that when schools open in the fall of the year epidemics begin. They should be stopped in their incipency, and it takes trained men to do these things. It not only takes trained men, but it takes men of tact, men of character, men of ability, men who will go out and do things, and men who have an ambition to do the thing that is best for the people regardless of whether it is best for themselves personally or not. We have got to reach these people; we have got to have some money to do this, and what we need in this State is an all-time health officer, with a pathological laboratory in every county in the State, regardless of how remote it may be from the center of population. We need a good pathologist to take care of the laboratory; we need from one to half a dozen visiting nurses in every county in the State of Kentucky—educated women, properly trained in preventive medicine and let them go out among the people of Kentucky, among the boys and girls, and they can do more good than any physician in the State of Kentucky. We had a striking illustration of the efficiency of women when Miss Hunt visited our town, a woman who is very capable and enthusiastic over the work she is doing. She came to our little town, where we made arrangements to get a visiting nurse, but we had some men in the council who were wooden-headed fossils, who refused to appropriate any of the town's money to help in this matter after we had gone to the Fiscal Court and got their appropriation, members of the council, who opposed the appropriation of one penny to help pay for a visiting nurse, not because they did not know it was right and did not know it was best, but because they were afraid they might be criticised, and did not have backbone enough to stand up and do their duty and do what they knew was right.

S. C. Frankel, Louisville: There is just one thought along the line of work of the health officer that I wish to speak of, and it is the work of the medical school inspector, a subject the doctor did not mention. I believe that the systematic inspection of schools, as it is done now in Louisville and has been done for seven or eight years, can do more good, especially to the coming generation, than any other one thing or, at least, as much good as in any other line along social health work. This work, as we are taking it up in Louisville, is not alone for the purpose of discovering contagious diseases, but for the purpose of discovering physical defects, as well as lecturing to the coming generation on the different sanitary subjects. These young individuals, especially those of the poorer people, take in the thoughts that are expressed by the inspectors, and they carry the importance of these talks home to their parents. We impress these young minds very much more than we would if we were talking to the fathers and mothers, and

these little individuals go home and endeavor to carry out the different sanitary instructions given by the medical school inspectors. The work of this character shows improvement in the sanitary appearance of the buildings, the rooms, in the appearance and cleanliness of the children within a few weeks after the work is taken up.

I had the pleasure of doing pioneer work in Louisville; I was one of the first medical school inspectors appointed in Kentucky seven years ago, and the work we found before us was simply appalling. After being in this work for five years the good we had accomplished was hardly measurable. The children would become very much interested in the different sanitary problems, the teachers would show interest, and the good we did in protecting children against contagious diseases, in discovering and correcting physical defects in the general appearance of the children, and in their cleanliness, is hardly appreciable, to say nothing of the good we did by sending the sanitary instructions home to the parents. The good was beyond any estimate.

PROSTATECTOMY, ITS INDICATIONS.*

By P. H. STEWART, Paducah.

It would be impossible for one doing a limited amount of surgery in a restricted community, to present an entirely original paper on this subject, and offer for consideration anything new or original. In the beginning I shall state, it will therefore be necessary to draw liberally from the writings and works of authorities in this line of work, and I wish now to especially give credit for the value, if any, of these thoughts to Judd, Beaver and Young.

I know no branch of surgery that made more rapid strides in its developments than did that of the prostate.

Some blind and accidental surgery has been done previously but in 1834, by Guthrie, was probably established the first real surgical procedure on the prostate, and this consisted in dividing a "bar across the neck of the bladder," by a catheter carrying a concealed knife. The early surgical procedures consisted more of efforts to do a prostatotomy than a prostatectomy, and the means to the end were with specially devised instruments along the line of the instruments used to-day in doing an internal urethrotomy. In the early history of surgery of the prostate the chain of priority, and credit for doing the work by certain methods, at times grew very heated, and so overshadowed the good to be accomplished, that the advancement and perfection of prostatic surgery was held in abeyance for almost half a century, or until American surgeons stepped into the arena and challenged

the contenders, and by the results achieved in their efforts, surgery of the prostate was placed upon its present high plane of perfection.

The conditions calling for prostatectomy are usually benign hypertrophy; yet from 12 to 20 per cent. of the operations done past 50 years of age prove malignant.

The diagnosis usually presents no difficulty, as prostatic hypertrophy is usually met with in individuals of more than 50 years of age, and they come to you usually with a long previous history of bladder symptoms, frequent urination, slow in starting, stream small, quantity reduced, and not infrequently with the history of retention and catheterization over an extended period. Digital examination per rectum discloses hypertrophy of one or more lobes, varying in size and consistency.

Only rarely is the cystoscope necessary to establish a diagnosis, but it is of very great importance in determining complications, such as other forms of intra-vesical tumors, excrescences and calculi, whether or not there is middle lobe involvement, and the condition of the bladder wall in general. Advantages can always be obtained by the use of the cystoscope unless there is some contra-indications to its use, and especially is it valuable in determining the character of the urine from each kidney.

Hypertrophy of the prostate is not necessarily a pathological condition confined to the aged, but is frequently encountered in patients under sixty years of age. In fact, the symptoms arising in after life, frequently are only the results of an enlarged prostate extending over a large number of years, and only appear to give rise to pain and discomfort after atrophic and senile changes develop in the bladder. I have but recently operated on a man fifty years of age, by the suprapubic route, removing three lobes, who has suffered more or less for the past six years with all distressing symptoms of prostatic hypertrophy, residual urine, frequent and scanty urination, nocturnal discomfort, at times bloody urine, retention and frequent catheterization. This man made a rapid recovery, the wound of operation healed readily, re-establishing of urinary flow through the urethra and complete control was had within four weeks, and in a conversation with him within the last few days he assured me his sexual desires were as strong as at anytime in his life, erection perfect and sufficiently lasting, and he is satisfied that during sexual intercourse ejaculation takes place, and the sensation of pleasure is as acute as he had ever known.

It is not always an easy task to decide just which patients should, and which should not be submitted to surgical interference. In my

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opinion, the functional ability of the kidneys should supercede all other symptoms in assisting us to arrive at a conclusion or decision. Uremia is the direct cause of more deaths following removal of the prostate than any other one thing, and for that reason the functioning powers of the kidney should be well known and well established prior to operation—else the mortality will continue high in prostatectomy.

Deaver says, "the first consideration is the condition of the patient himself." We should not demand that he be a better surgical risk than one for his years. Age with its inevitable arteriosclerosis and other senile degenerations is not in itself a contraindication. It is true that the mortality mounts somewhat with the age, but so also does the danger of the primary condition, and the remarkable ability of old and feeble men to endure an operation on the prostate remains a perpetual source of surprise, even to those familiar with the fact. The tables of Tenny and Chase comprising 816 cases in 1906 bear out this assertion, and I feel that the mortality of more advanced age will be still further reduced, if we can overcome the reluctance of the physician to subject elderly men to operation unless the gravest conditions absolutely compel. The mortality *per se* in the hands of the skillful surgeon is small. Fatalities are practically limited to those who are already living up to the limit of their functional capabilities, and are unable to endure an additional burden.

The functional capability which chiefly concerns us, is that of the kidneys. The largest toll of death after operation is exacted by uremia. The preoperative treatment is of more importance than the operation itself. The majority of prostates are in poor general health, with their heart and kidney function taxed to the utmost, accompanied by changes and degenerations of senility, and therefore require preoperative treatment along general and special lines before being subjected to operative interference. Especial attention should be given the kidney function, and unless this can be brought up to near normal we had best withhold all efforts to remove the prostate.

To define definitely the degree of local trouble which renders operation necessary is not always easy, for it is unquestionably true that many men past the meridian of life possess a prostate giving but slight and occasional inconvenience. Not every patient suffering from frequent urination, the result of prostatic enlargement is a subject for prostatectomy, for many in advanced years with but intervals of inconvenience and discomfort can go on to the end of their expectancy in a marked degree of comfort under local and

general hygienic treatment, where surgical interference would necessarily mean an untimely death. Yet it is unquestionably true that many whose lives are cut short could have had them prolonged to useful ones by a prostatectomy if their physician had not sacrificed them to too active and long continued local and palliative treatment.

When a man reaches the milestone in life where he has frequency and difficulty in urination from prostatic hypertrophy and is unable to completely empty the bladder, as will be shown by the catheter, then he is treading dangerously near the time in which a prostatectomy would be the rational and proper procedure, to extend his days of comfort and usefulness. When the time has arrived in which it is necessary for him to keep more or less urine in his bladder in order to be able to void—he is a prostatic. But a small per cent. of prostaties seek surgical relief at a time when they are in prime condition. The inherent dread and fear of operation force many to procrastinate until complications arise, which for a time, at least preclude and prevent radical treatment. Obstruction existing over a period of time result not only in residual urine, but cystitis in varying degrees, and various kidney complications. These cases must have preoperative treatment if we are to hold down the mortality. Regular and frequent catheterization should be employed, accompanied by irrigation of boric acid, which should be withdrawn leaving the bladder empty—encourage these patients to drink freely large quantities of water. The diet should be mild, but no special feeding is necessary—albumen is frequently present, due to cystitis, but is in itself no contraindication. Hyaline and granular casts do not preclude operation, if the urine is large in quantity and high in specific gravity. Urotropin in 10 grain doses several times a day for several days, will materially improve the operative risk.

The selection of the suprapubic or perineal route is largely a personal one with the operator. Both have their advantages and disadvantages, as they have their advocates. Probably a small fibrous prostate can, as a rule, be easier removed by the perineal than the suprapubic, as can a large adenomatous one be better enucleated by the suprapubic route. On account of accessibility, ease of approach, drainage, and after control, operators, with but few exceptions have accepted the suprapubic as the route of choice. Yet when we have such eminent authorities as Freyer, Judd and Deaver advocating the suprapubic route in nearly, if not all cases, and Hugh Young doing prostatectomy in every case by the perineal route, how can it be expected that one doing general surgery is

able to decide in choice of routes? The pendulum has swung too far in each direction and to-day it appears that common sense and good judgment rather than fadism is to be the deciding factor in selecting the method of approach, and the consensus of opinion seems to be that in the large majority of cases the suprapubic route offers the greatest advantages at time of operation, and by this route the end results are better and more satisfactory. By the suprapubic route the seminal vesicles are less likely to be destroyed, the bladder can be more nearly closed, and the risk of a permanent urinary fistula reduced to the minimum.

DISCUSSION.

Irvin Abell, Louisville: We are agreed at the present time as to the indications for prostatectomy. Dr. Stewart has well said that not every man with an enlarged prostate is a subject for operation. A large majority of the men who present upon examination enlargement of the prostate do not present evidences of obstruction either to the blood supply or else to the urinary output, and these two factors, I take it, are the chief ones which would indicate interference in any individual with an enlarged prostate. It may be stated that a man with an enlarged prostate that is free from urinary obstruction, that is free from marked infection, that is free from marked cause to urinate, so that it does not interfere with his rest and general health, is not a subject for operation. That all other cases presenting any of these symptoms, presenting any of the complications that go with it, are subjects for operation, provided, of course, that their general condition warrants or permits of operative procedure in this type.

As to the question of malignancy, the percentage mentioned by Dr. Stewart has rather surprised me; it has not been borne out in my personal experience. After the age of fifty, 12 to 20 per cent. of the cases of enlargement of the prostate revealed them to be malignant. My personal experience with malignancy in an individual presenting a prostate showing malignancy, recognizable before operation as malignancy, cannot be benefitted by operation other than to procure temporary relief from obstruction by making a suprapubic opening. The patients benefitted are those in whom malignancy was not recognized at the time, with no clinical symptoms indicating any condition apparently upon visual inspection, yet on microscopic examination showed a transition from a benign hypertrophy to malignant degeneration.

In regard to the preparation of the patient, here, I take it, is where our greatest progress has been made in recent years as to the immediate and ultimate outcome.

In regard to the cystoscope, I do not believe every individual who is to subject himself to an

operation should be cystoscoped. One characteristic effect of enlargement of the prostate is the distortion of the prostatic urethra. The introduction of a metal instrument may produce injury to the overlying mucosa and introduce an element of infection which might be a determining factor in the outcome of the patient.

As to the symptoms of hemorrhage indicating the desirability of a cystoscopic examination, I make the examination with the patient under an anesthetic and when ready for the operation itself. Any trauma incidental to a cystoscopic examination made at that time cannot be a source of danger to the patient since operation immediately follows, in all probability, and removes that portion of the urethra.

The preparation of the patient to me is the most important feature. Dr. Stewart rightly emphasized conditions which are to govern us in determining operation in a given case. He emphasized particularly renal inefficiency, the condition of the heart, the condition of the blood vessels, in other words, the man's general condition. The general condition can, as a rule, not be greatly improved. If he presents arterial disease with high blood pressure you cannot do very much. A great deal can be done for renal insufficiency, but a great deal will depend upon the actual condition within the kidney, whether due to back pressure of the water or to obstruction to the outflow.

There is a disposition at the present time to make suprapubic drainage in all cases previous to removal of the gland itself. That has not been my practice. Every individual who comes under observation for prostatic hypertrophy is given not one but two 24 hour collections of urine, or rather a 24 hour urine is examined not once, but at two consecutive 24 hour periods with reference to the urinary findings to see whether the amount of nitrogen and urea and solid contents is normal. Second, the patient is given the phthalein test. In my own experience that has proven to be of the highest value, and I recall two instances in which phthalein did not appear in the urine within an hour and a half after its introduction into the muscle. In those in which it makes its appearance in from 25 to 30 minutes, where the output is over 45 per cent., the renal sufficiency is satisfactory. In those in whom the renal output for phthalein was less than 45 per cent., or in whom it is delayed 25 minutes, they are considered patients best suited to prolonged suprapubic drainage. Under these conditions the bladder is drained suprapubically and suprapubic drainage continued for an indefinite period or as long as there is an increased output of phthalein. I have drained them for thirteen weeks in one or two instances, in others two weeks, and when we got 12 per cent. in the two hours' output, getting 45 per cent. at the end of thirteen weeks drainage, I have removed the

gland, and the patients have made a satisfactory recovery.

I quite agree with Dr. Stewart that the chief danger is uremia, and it is only by careful study of the general condition of the patient with an efficient renal output we can avoid this mortality. There will be, as stated, an unavoidable mortality, whether that comes from embolism, from the degenerations which are incidental to advanced years, or whether from subsequent hemorrhage. But taking it all in all, taking the cases as they come to us for operation, if we are careful and study our cases thoroughly, I am sure the mortality can be reduced to as low as five per cent.

Just a word as to the type of operation. The reason that the suprapubic operation has become so popular is, first, it is safer because it is easier. The suprapubic operation, if we consider the musculature which controls the outflow of urine, is by far the easier type of operation. It is hardly possible to injure the musculature which controls the urine by the suprapubic operation, and it is an exceedingly difficult matter to injure it by the perineal type of operation. The excellent drainage afforded by the suprapubic type of operation is also an element in its favor. Its freedom from epididymitis, from hemorrhage, also makes it a satisfactory method, and the fact that we do not fear urinary fistulas and incontinence of urine following the suprapubic method, makes it decidedly, I think, the operation of choice.

John R. Wathen, Louisville: Dr. Stewart has presented us a paper in which there is a good deal to praise and very little to criticise, and as Dr. Abell has so well covered the selection of patients, I will dwell upon a few other points.

There are two fundamental principles that present themselves in considering the treatment of enlarged prostate. The first is the condition of the patient, and the second is the character of the treatment. We can benefit the condition of our patients very largely by the character of the treatment employed. I have almost entirely abandoned, with few exceptions, the perineal route, and prefer to do the operation by the suprapubic method. I have almost entirely come to adopt the two stage method which offers such advantages in other lines of surgical work. When we are dealing with men at the age at which these prostatics present themselves, we are forced to do everything that will be conservative. When one of these patients comes to the hospital, as soon as we are able we put him under local anesthesia, under novocain and adrenalin and do a suprapubic cystotomy. We make an incision down to the bladder; we introduce a few guide stitches to hold up the bladder, and with a small puncture we introduce into the bladder an umbrella catheter, and we anchor it in place similar to when we would place a tube in the gall-bladder. This catheter is firmly fixed. It does not allow of any leakage, and the patient then is drained through the suprapubic wound.

This allows several things to occur. In the first place, it allows the dilated bladder to contract; it relieves the congestion of the prostate and bladder wall; it takes off pressure from the kidney, and it allows us to treat the bladder by irrigations of warm boric acid solution. By removing the pressure from the kidney we have accomplished a great deal. Furthermore, it allows us to prevent that one element which causes mortality from prostatectomy, and that element is infection. The infection, as Fryer and others have brought out, is the cause of uremia. If we can prevent infection in the early stages of treatment or the late stage, we have an excellent chance to cure the patient. In connection with drainage we allow granulation tissue to form in the prevesical space which is so liable to become infected, and at the end of a week, two weeks or three weeks, when the patient is in condition which we can tell by functional tests, we are then ready to enucleate the prostate. Under nitrous oxid and oxygen anesthesia we do the suprapubic operation.

What is it that reduces the resisting power of the patient? In my mind it is the hemorrhage from this operation and following the operation. If the prostate is enucleated rapidly and carefully, and the proper line of cleavage found so as not to open up the venous plexuses in the capsule, we can enucleate the prostate rapidly without very much hemorrhage. It is impossible to avoid having some hemorrhage.

I have constructed a ligature carrier like a fish-hook, with a self-retaining retractor in the bladder, we introduce this ligature carrier and lift up the capsule of the bladder and the neck of the bladder, and having an assistant place his fingers in the rectum we invert the prostatic cavity and suture the upper portion of it with three or four small catgut sutures. It is surprising how rapidly you will control an alarming hemorrhage in this way. When we attempt to pack these cavities with gauze we invite infection.

In regard to the after treatment, we place a catheter in the urethra and half way up the Fryer tube. We place a large rubber dam over the Fryer tube to prevent the urine from coming in contact with the skin. If with this two stage operation one is careful with his technic, at no stage in the process should this wound, which has been made in the abdomen, be allowed to come in contact with the urine itself. I will not dwell upon the further treatment because it is complicated, but it is surprising how we can absolutely avoid infection, and if we avoid infection we will reduce our mortality.

C. W. Dowden, Louisville: Dr. Stewart has laid particular stress upon the fact that the mortality following operation upon the prostate gland is due to uremia. This, I am sure in a majority of cases is true. If true, we should undoubtedly welcome any procedure by which we may be able to prognosticate or determine an im-

pending uremia. I doubt very seriously whether any drug that is introduced into the system will give us an index as to the function of the kidney by the quantity eliminated in a definite period of time. I know practically nothing of the operation, but I do know that more of the cases which eliminate practically no phenolsulphonaphthalein, will go on to a successful termination after operation, and again we will have those cases with quite a sufficient output of phenolsulphonaphthalein that will result disastrously. How can we best determine which cases are satisfactory for operation? Common sense tells me, and I know further from actual experience and from the scientific work that has been done in this country, that the renal function is best ascertained by the determination of the retention of the nitrogenous products of the blood that are the result of abnormal metabolism. In other words, if the normal figures for non-protein nitrogen are 30 mg. per 100 c.c. of blood and for urea nitrogen 16 mg. per 100 c.c. of blood, and on estimating these products we find the urea to be 40 or 50 and the non-protein nitrogen up to 100, I think that patient would have a slight chance to recover from any operation no matter what the phenolsulphonaphthalein output may be. I feel on the other hand, if we should have absolutely no phenolsulphonaphthalein output and a normal non-protein nitrogen content of the blood and a normal urea nitrogen of the blood, the fact that we get no phthalein should not deter us in our procedure. This fact has been demonstrated in apparently similar cases as far as the disturbance and the pathology of the prostate was concerned, and each with 50 mg. of non protein nitrogen per 100 c.c. of blood. One case was operated and died from uremia. The other cases were placed on a low protein diet until the non-protein nitrogen came down to normal limits, and these cases went on to a successful recovery. All had practically the same phthalein output which was below 20. I simply make this point to show that in my opinion, and the opinion of men doing this character of work, that there are tests more valuable than the phthalein output. If the prostate needs to be removed, I do not believe the patient should be refused operation until all those tests are made which will determine more accurately the patient's chance of recovery so far as uremia is concerned.

Louis Frank, Louisville: The remarks by Dr. Dowden compel me to call attention to his paper of yesterday in this discussion and to again mention the fact that this is a widening field of work which is of tremendous value. I think I spoke of this yesterday in discussing his paper as applied to this class of cases, that is, the type of cases we have under discussion, the old prostates. Of course, this work is applicable to other cases.

I think it is pretty well settled as to the various types of operation that we do, and say what

we please, there is nobody who will ever achieve the success of Young with his type of operation. I think it makes no difference what character of work we may do or what type of operation we may follow, we must take off our hats to Dr. Young when it comes to doing perineal prostatectomy. We must take off our hats to his mortality statistics. There are a great many of us who believe that the morbidity or sequelae, as has been indicated by the opener of the discussion, are decidedly less with the suprapubic operation than they are with the perineal operation, but I do not believe there is any one of us who would follow one type of operation merely because it is easier if some other type of operation were best suited to a certain individual case. I do not think there is any one of us who will be able to achieve the success in the perineal operation that Dr. Young has achieved by his own particular operation, so-called. I certainly think the whole crux of this matter lies not so much in the character of the operation, but in what each of the speakers has indicated in his paper, which was again brought out by Dr. Abell and Dr. Wathen, and that is the preparation of the patient for the operation and the selection of the time when the patient is susceptible of being carried safely through the operation. This is a point we must have constantly in mind in doing prostatectomy by either method or route. To bring a patient through after an operation may be quite a different thing. Successful operations without recovery of the patients are not things that I think surgeons who have a true idea of their work should aspire to. It is saving the patient even by what may not be at the time, an ideal operation. Preparation of the patient must be done, and I think the whole thing lies in saving the lives of these patients by the proper management of them. Personally, in those cases which have a low urinary output, and in cases probably physically weak, my practice has been in a great many of them to follow the two stage operation. I believe I have been able to save lives in that manner. We have lost one or two patients I think by the two stage operation, one after the removal of the prostate. There can be no doubt but that the two stage operation in a great number of these cases is by far the best plan of procedure to follow.

The suggestion offered by Dr. Wathen of doing the preliminary work under local anesthesia and introducing a large sized tube, and then under gas anesthesia enucleating the prostate without further incisions, is a good one. We have lost no cases at all by this method, and we have had quite a number of bad risks which we have been able to carry through. One case Dr. Dowden will recall had no phthalein output after 2 hours, yet operation was a success. I have watched the blood of these patients as well as the functional output of the urine, and if we do this we can fairly prognosticate the outcome.

There are patients with a certain per cent. of nitrogen and urea in the blood who will die. We have made some studies on cases of calculus anuria in which there was a gradual retention of the nitrogen in the blood. We have also cases of non-calculus anuria in which the same study has been made showing a difference and what can be done in the way of prognostication. This means the selection of cases for operation. There are few cases we reject if we watch carefully the condition of the blood and are able to improve its condition.

There is a tremendous field for this work, and I think if we do our work carefully and do what is best for the patient, we will protect that patient in every way possible, and the blood study gives us an additional means of protection.

P. H. Stewart, (Closing): There are only one or two points I desire to mention, one of which is that there are two conditions, two most important conditions, which call for prostatectomy, and the first of these is obstruction, or obstruction and irritability. The obstruction can be temporarily relieved by the two stage operation, as can also irritability. The two stage operation unquestionably has a great many advantages, and the greatest advantage I can see to be attributed to it is the possibility of the reduction of mortality. If a lowered mortality can be accomplished by a two stage operation it is certainly of great service to the surgical profession and to the unfortunate prostatic.

I spoke chiefly about the urinary function, and am convinced the functioning condition of the kidney is of paramount importance, and should be our deciding factor in every case which comes to us for operation. If we are unable to get the urinary output up to somewhere near normal, we had better withhold operation, for if we resort to operation we are certainly face to face with a mortality. I speak feelingly of this from some bitter personal experience. My mortality in prostatectomy has been entirely too high for my satisfaction, and I am only too glad and willing to accept and resort to any measures which offer hope of reduction.

Immune Reactions in Scarlet Fever.—Complement deviation and cutaneous tests made by Dicks failed to demonstrate any specific scarlatinal virus or antigen in the blood serum or in extracts of spleen or lymph glands. Fixation tests with throat mucus as antigen gave in one instance a weak fixation of complement with the serum of a convalescent scarlatinal patient. The toxicity of human blood serum for guinea-pigs is increased during the acute stage of scarlatina. Positive Wassermann reactions in scarlet fever obtained with the acetone insoluble portion of alcoholic heart extract, the author believes, are strongly suggestive of syphilis.

SIMPLE MODIFICATION OF MILK FOR THE BABY.*

By D. H. McKINLEY, Winchester.

Perhaps a more appropriate title for this brief paper would be the simple modification of milk from the viewpoint of the general practitioner, for it is written for the general practitioner, by a general practitioner, and I have attempted to make it as simple and practical as possible, ignoring completely the ultra-scientific side of infant feeding, which would perhaps appeal to the pediatrician but be a bore to the rest of us.

How much does the average doctor know about the proper modification of milk for the infant? It is my opinion that if he is honest he will admit that he is conscious of a great deficiency along this line and has a desire to know more about it—for no one can deny its tremendous importance.

"When one remembers that approximately 1-4 of all deaths occur in the first year of life and that of these about 60 per cent are due to gastro-intestinal disturbances, he begins to realize how very important the proper nutrition of the infant becomes." (Grulee). It is a subject not nearly so spectacular as a Cæsarean section or the application of Lane plates to a fracture that would have done much better without them, but it is vastly more important. I fear, however, that the whole subject of pediatrics is regarded by the average practitioner as a minor branch, a side-issue if you please, in his broad field of practice, and the artificial feeding of the infant is particularly uninteresting and distasteful to him. I believe the chief reason for this is that it has, in the past, been surrounded by a lot of pseudo-scientific tommyrot; and there were so many different methods and complicated formulae and the whole subject has been so vague and contradictory, that the average man who has not had the time or the opportunity to make a sufficient study to separate the true from the false is more or less discouraged: so when a case in point is presented he often disposes of it in the easiest way by telling the mother to put the baby on some proprietary food and gives her several sample bottles of same from the abundant supply that a detail man has so generously left in his office.

Sometimes, however, he does much worse than this: For instance, I know some otherwise good doctors who are in the habit of advising condensed milk for artificial feeding—notwithstanding the fact that it is notoriously the very worst preparation of the vast host masquerading under the name of infant food. The advances made in infant feeding during

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the past few years have been revolutionary in character. Only recently has the casein ceased to be the scapegoat and have heaped upon it the blame for practically all the digestive disturbances, and the same conditions in which, a few years ago we fed whey and threw away the curd, to-day we feed the curd and throw away the whey.

When I left medical school in 1908, I left with the impression that infant feeding was largely a question of arithmetic; that if one knew Baner's, or some similar formula all he had to do was to take his pencil and paper and figure out a certain percentage of this and that, and the result would be perfectly satisfactory. Of course it is perfectly absurd to expect to feed all infants according to any set formula, and only in a very general way can we follow a given method, for it is certainly true, as Czernay has said, that "each infant is a law unto itself and must be treated as such." As a working basis, however, for the artificial feeding of the infant, I believe in the simple dilution of whole cow's milk with the addition of some sugar, preferably dextri-maltose. Of course the strength of the mixture, the amount of sugar and the amount to be given at each feeding, must be determined according to the age and weight of the child but the interval between feedings should be four hours in all cases. This should be regarded as a fixed rule. If a baby is given food at irregular and short intervals, sooner or later it is going to have digestive disturbances and as it requires about three hours for the digestion of cow's milk in the stomach, the reason for the four hour interval is obvious. Let us take as a simple example an infant four months old, weighing ten pounds. A child requires 1 1-2 ounces of whole milk per pound in twenty four hours in order to thrive, or, expressed in another way, it requires from 40 to 45 calories per pound. Assuming 42 1-2 calories to be the average, and about correct for a child of this age, 425 calories in twenty-four hours would be the required amount in this case. At 1 1-2 ounces of milk per pound, we would need here 15 ounces of milk, which has a food value of 315 calories; if we now add one ounce of dextri-maltose, equal to 110 calories, we have a total food value of 425 calories, or the required amount. Assuming five feedings of five ounces each to be about correct in this case, we will have a total amount of 25 ounces so we must add 10 ounces of water to our milk and sugar. Our formula then would be: whole milk 15 ounces, water 10 ounces, dextri-maltose 1 ounce, having a total food value of 425 calories.

Any number of such examples can be found in any modern text book on infant feeding. If one prefers, he can use barley water instead

of plain water as a dilutant, and it perhaps has some advantages.

I want to mention the top-milk method of modifying milk to condemn it. It has been popular in the past and has done much harm because the resulting formulae contained too high a fat content, and indigestion frequently resulted. Should the milk be boiled or not? That is a question about which many arguments have been and still are being waged. Personally I believe there is little or no disadvantage in boiling, and if there is the slightest doubt about the milk in warm weather I always advise boiling.

Of course it is beyond the scope of this paper to discuss feeding in sickness or abnormal conditions. Before closing, however, I do want to say that I am a firm believer in the use of Finkelstein's albumen-milk in diarrhea and certain nutritional disturbances. I get better results from it than from anything else I have ever used. Its only disadvantage is the trouble of its preparation. There is a soluble casein-calcium compound on the market which, when added to diluted milk, makes a food similar to albumen-milk. It is probably inferior to it but has the advantage of being much easier prepared and is serviceable in the same type of cases.

Strange as it may seem, when subjected to the light of intelligent study, it is nevertheless true that the laity as a whole and a large proportion of the medical profession regard the biggest and fattest baby as the finest and most healthy. It is my opinion that extreme overweight in the infant is just as serious a menace as it is in the adult, but this same condition which will get the baby's picture in the magazines as an advertisement of some proprietary food, will cause the adult to be rejected as a bad risk by any life insurance company in the world. Excessive weight in the infant is the result of overfeeding, which means strain and overwork of the digestive organs, and which sooner or later is sure to cause trouble. The successful feeding of the infant requires attention to details. The child should be weighed once a week, and a gradual but steady gain is to be desired, the stools should always be examined in case of disturbance, and such symptoms as constipation, diarrhoea, colic, vomiting, etc., should never be passed over lightly or neglected, but the cause should be found and corrected as soon as possible. If these details are looked after properly, infant feeding will, in a large measure, cease to be the bugaboo it has always been to the general practitioner.

DISCUSSION.

W. E. Gary, Louisville: I wish to congratulate Dr. McKinley on his most excellent paper, for I think his method a very good one.

I wish to emphasize the fact, however, that be-

cause we can easily modify milk to suit the baby we should not use artificial feeding if we can possibly avoid it.

The question of feeding babies according to chemical formula is good as far as it goes, but it is not all that is essential. The problem is not simply one of furnishing a food that will build up bone, muscle, and fat tissue, but we must also build up in the child ability to combat disease, which is the most important thing to my mind. Every Pediatrician knows that breast-fed babies have an immunity from certain diseases of childhood while nursing, unless the mother is in such a poor condition as to contract the disease. Also it has long been a recognized fact that there was something in the mother's milk that gave the baby this immunity. Recognizing this fact we must be very sure of our ground before taking the baby off the breast. Recently we have had interesting examples in Europe where the artificial food supply for infants has been cut down, and where they have been forced to use mother's milk in many cases where formerly they did not think it was possible. The death rate of infants has decreased in Berlin and Paris since the war began instead of increasing as was expected due to lack of food, and the same has been true in every city under siege where statistics have been kept. Therefore we must take more intelligent care of our mothers during the nursing period, and feed fewer with the bottle. Examination of breast milk should be made at the first sign of trouble with the baby, and the conditions corrected if possible, instead of empirically changing the baby's food without knowing why. As one source of trouble, in the light of our recent work showing that the essential active, vital principle of milk is the white blood cell which is found normally in all milks, Kurk and I have made examinations of mother's milk in cases where colic, green stools, etc., gave rise to trouble, and found a deficiency to exist in a good many cases. We at first attributed this deficiency to the poorly nourished condition of the mother rendering her unfit for the manufacture of these cells in excess of her own demands. Later we found this deficiency to be due to the breaking up of the leucocytes by bacteria in the breasts. The bacteria are non-pathogenic to the mother but change the milk so that gastric disturbances occur in the child. It is possible that our trouble in feeding cow's milk to babies may also be due to the killing of the leucocytes by bacteria resulting in a dead proteid material that the baby is unable to digest. The live leucocyte has peptonizing properties and may aid digestion, but I believe they go directly into circulation without being broken up, and thus impart the immunity of the mother to the child. Our text books teach us that mother's milk is sterile but in fifty one cases, most of whom were sent to us because of trouble with the infant, we found only six or seven that could be considered sterile, while the others ranged from sev-

eral hundred bacteria per c.c., to 25,000 per c.c. The samples were collected in sterile test tubes after sterilizing the breast with alcohol and being careful not to touch the nipple while milking. In one of our first cases where the baby refused to nurse until it would get so hungry it was forced to do so, we could find no trouble with the quantity of milk or quality except a deficiency of leucocytes and 11,000 bacteria per c.c. Thinking that the bacteria were due to lack of leucocytes to combat them we put the patient on arsenic to improve the blood condition of the mother. The baby nursed normally on the second day. The results were obtained so quickly, much sooner than improvement in the mother could possibly occur as a result of the treatment given that a bacterial count of the milk was made, and it was found to contain only 90 colonies. That arsenic is eliminated through the milk is shown by the physiological effect on the baby showing puffiness under the eyes, etc. In all other cases where the trouble has been due to bacteria, arsenic has eliminated the bacteria, the green stools and colic disappeared. But in cases where there is insufficient milk, arsenic will not of course increase the flow. The foetus in utero throws off a substance to stimulate the maternal organism to furnish food. This food goes through the placenta, after birth it goes through the mammary glands to the child, after birth there is nothing to stimulate the maternal organism except the baby nursing the breasts. If milk is left in the breasts it is a notice to the mother that too much food is being manufactured and there results a decrease in the amount. Therefore to keep the mother in a full flow of milk, she must have plenty of nourishing food preferably a quart of milk a day with her other regular food and the breasts must be milked clean at least every four hours.

If the baby does not take all the milk at first, let it have what it wants, and pump out the rest. It will soon demand the entire output. Never put a binder or compress on the breast, as that will also have a tendency to check the secretions.

One of the first symptoms of the presence of bacteria is an excessive lactation which is usually allowed to remain in the breasts resulting in a beginning drying up in two or three days which should not be allowed. After birth of the baby we have no means of stimulating the secretion so be sure to keep it going at full speed.

J. Rowan Morrison, Louisville: I enjoyed Dr. McKinley's paper very much. I think this is a very good subject to talk about. I have been associated with the Babies' Milk Fund in Louisville for over six years. For a part of the time we adopted the percentage method of feeding, but for the last three or four years we have used simple modifications, simply taking whole milk diluting it with water and adding cane sugar because it is a question of economies. It is better than malt sugar. Our experience has been that these children have done as well or better with these sim-

ple modifications than they did when they were put on the percentage formula, and these percentages are made in the Childrens Hospital, Louisville, prepared by an expert nurse. The children have got along well; they have gained in weight, and their general health at the end of the year is just as good if not better. This method is simple it is easy, and when one uses simple modifications of whole milk he should check up the children from time to time by the amount of food he is feeding, the number of calories. Calories seem to be a bugaboo to some practitioners. They seem to be in a far country and cannot get to it. If you know you have so many ounces of milk, if you multiply that by 20 or 22, it will give you the number of calories you are getting from the milk. We find this, that where 45 calories per pound is normal for children, some children who have been retarded, have been fed poorly on condensed milk or other forms of milk, can take very many more calories than those to great advantage and will gain more rapidly. I think this is a good method for general feeding, but I am convinced it is not as scientific, as a great many children will not do as well on this as by feeding them the proportions of fat, sugar and proteins needed for infants of their age. I believe, from a pediatric standpoint, that is a very valuable thing to keep in mind, and in many of the cases fed in a simple way, if they do not do well, we have to change the different proportions of the elements of their food.

As regards the question Dr. Gary brought up, we should always try to keep the child at the mothers breast, as this is a most valuable thing if it can be done.

I am interested in the work he is doing. He says he gives arsenic to lessen the number of bacteria. Arsenic will do good, and it will do good if you consider the mother's diet away below what she should have, and she needs more food to build her up to give proper diet for the child.

Henry Enos Tuley, Louisville: I think this is one of the most important subjects that can be brought before the Association and I would like very much indeed to have some phase of infant nutrition put upon the program annually, because the general practitioner, as a rule, as has been brought out by the essayist and discussants, looks upon this subject as a bugaboo, and does not pay enough attention to it.

I think the essayist might have laid more stress upon the matter of maternal feeding and in connection with breast feeding complemental or supplemental feeding. A great many more mothers could prolong the nursing period when their milk apparently is giving out by complemental feeding, by feeding immediately before or after the child has nursed. If there is an insufficient total quantity secreted by the mother, the child can be given two or three nursings in twenty-four hours, and the balance supplemented by artificial milk. The child does better if partly nursed and partly fed, rather than give up the breast entirely. We

lay too little stress upon the importance of breast feeding, and oftentimes we can do more good in children that are not thriving by putting them upon a wet-nurse. Very recently I was able to save a baby's life by advocating a wet-nurse for feeding that had been turned down by a practitioner because there was such a discrepancy in the ages of the foster child and the child of the wet-nurse. There was something like four months difference in the ages of the children. That milk was taken care of by the younger child.

I heard Dr. Sedgwick, of the University of Minnesota, in speaking on breast feeding before the Mississippi Valley Medical Association, say that he had a prize wet-nurse in the Northwest—a woman who had nursed some twenty-six babies. About that time he went to Europe and the wet nurse whose child was twenty-six months old was still nursing a baby a few weeks old. It is estimated that this wet-nurse gave 100 gallons of milk.

It is an erroneous idea to think that the children have to be of the same age in order for the foster-child to thrive for we are more often able to get a mother who has a much older child, to assist in the nourishment of the baby when artificial feeding cannot be used.

Like the essayist, I think oftentimes we are confronted with mathematical problems in connection with the modification of milk which ought not to exist. There are two things that ought to be borne in mind and which are often responsible for failures in whole milk modification in not knowing the character of the milk you are getting. In the first place, as to its cleanliness; in the second place, as to butter fat. Very frequently, when we are artificially feeding children we have a butter fat content which will be six to seven per cent., and that milk cannot be modified for the young baby with the whole milk method without some disturbance, such as vomiting or diarrhea. That point ought to be kept in mind. It is also important to get clean milk.

Those of you who haven't had the opportunity of following the work of Dr. Gary should look up the papers he has published in regard to these investigations which he is making. All of the authorities have been talking about the vitamins in milk, the life-giving property, and Dr. Gary has told us what this life-giving property is. It is the white blood corpuscle, and it has been borne out by his investigations. I have followed his work. If you are not familiar with it, I would urge you to familiarize yourself with it. It illustrates one point with regard to the pasteurization and sterilization of milk. By pasteurizing and sterilizing milk you do harm to the life-giving property, which is the leukocyte. Do not forget this work which is epoch-making; it is being talked about elsewhere, and you should know what is being done in your own State.

W. F. Boggess, Louisville: One criticism I

would make of Dr. McKinley's paper is in regard to boiling cow's milk. If you do that you destroy the life-giving principle of the milk, and as Dr. Tuley would have said if he had a longer time, it is the white corpuscle of the milk that is the life-giving principle. It is the vitamine of the cow's milk. When you feed babies artificially and you feed them pasteurized milk or boiled milk, you will get rickets and many other constitutional disturbances, and a baby will not thrive on pasteurized milk nor on boiled milk.

Another thing with which I disagree, if I understood Dr. McKinley correctly, namely, that the casein question is to be absolutely ignored. The old idea that casein was a great bugbear to the milk is not true, but it is a well known and well accepted fact that the casein in cow's milk is different from the casein in human milk in its physiology, not in its chemistry, particularly is that the case in reference to the coagulating properties, and that is a problem that must be overcome if we feed babies successfully on cow's milk.

I heard Dr. Sedgwick's splendid oration at Indianapolis, to which Dr. Tuley has referred, and I think it would be well for the Program Committee to invite Dr. Sedgwick here to talk before the State Association on some future occasion. The tendency of the physician is to say that mother's milk is not good for the baby. How does he know that? Because a baby is not thriving, it is possibly because the mother is not well, just as Dr. Morrison remarked, the mother may be anemic; she is not getting sufficient food. We know that few cows can give good milk on poor food, but we can increase the total quantity of the milk by proper feeding. If we use half as much sense and reason in the handling of mothers as we do in regard to milk cows, we would not have so many mothers who fail to nurse their babies, and if, after massaging the breast, proper milking of the breast, the baby in the beginning is not physically able to milk that breast properly, you can supplement it by your own manipulations of the breast and thereby stimulate the milk glands. If you have a cow that is not giving sufficient number of gallons of milk a day you can increase the total quantity of the milk by proper feeding, as well as the constituents of the milk itself. And so it is, we must look to the nourishment of the mother, to the physical condition of the mother, we must look also to the ability of the baby to stimulate the galactiferous function and by manipulation, by massage, by milking just as you do in animals, assist the baby to establish normal lactation.

There is no question that comes before the practitioner in the country of more vital interest, and about which the average doctor knows less, than infant feeding. It should not be above his understanding. It should be understood. The physiology should be understood, the chemistry should be understood, and it is a simple thing

when you understand it. It is not a simple thing if you do not understand the physiology of it all.

D. H. McKinley, (Closing): I agree with those who have discussed my paper, that no food can take the place of mother's milk. A child should never be weaned unless it is absolutely necessary. The title of my paper was "A Simple Modification of Cow's Milk," and I tried to confine myself as closely as possible to the title, because the subject of infant feeding is a very broad one, and there are many important things not mentioned in this short paper. Dr. Gary mentioned some of the causes of colic, and it occurs to me that three-fourths of the cases of colic in infants are caused by short intervals of feeding, and three-fourths of them can be cured by adopting longer intervals of feeding.

The statement that boiled milk should not be used because it will cause scurvy is still believed because it has been so often repeated. Scurvy has been held up as a bugaboo for years against the use of boiled milk and its importance has been greatly exaggerated. The danger of its production, which is very slight, can easily be overcome by the use of a little orange juice, which, by the way, should constitute part of the infant's diet at any rate. I repeat, that I believe the objections to boiled milk are for the most part ill-founded and imaginary.

ACUTE BACTERIAL SYNOVITIS.*

By J. GARLAND SHERRILL, Louisville.

This form of affection occurs as the result of an invasion of the synovial membrane of a joint by bacteria in sufficient number and virulence to excite a reaction. The most active forms of bacteria in the causation of this affection are staphylococcus pyogenes, streptococcus pyogenes, gonococcus (Neisser), pneumococcus, meningococcus, and also perhaps certain forms of putrefactive bacteria. The infection may occur in pure strain or in mixed type. The latter are undoubtedly in most cases of greater virulence than individual or single strain infection. As elsewhere, streptococcal infection results most disastrously.

The method of entry of infectious organisms into a joint appears to be in the following ways:

- 1st. Direct by trauma.
- 2nd. Direct by infection in contiguous tissue.
- 3rd. Indirect by blood stream.
- 4th. Indirect by lymphatic circulation. (?)

Examples of the first method are so numerous that they are familiar to all. Foreign bodies penetrating and remaining in the joint are important determining factors.

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Infections of the wrist joint from thecitis due to trauma or to felon are of rather frequent occurrences, and the invasion of the synovial sac by bacteria from infections in the cancellous tissue of the epiphysis of the long bone is by no means rare.

The method by which bacteria enter the joint from the circulation is a more complicated process and needs further elucidation before it can be fully explained. Just how, for instance, gonococci reach the blood and again are deposited in the synovial membrane and what determines their location in this structure cannot be positively shown. Nor can we state with certainty the reason why one patient suffering from gonorrheal infection suffers from synovitis and another with a similar or more severe case escapes.

The most logical explanation offered for the entrance of this and other forms of bacteria into the circulation is that the organisms are confined in some follicle or abscess cavity under pressure sufficient to permit them to enter the blood stream. This presupposes as well some damage to the vascular wall.

Phlebitis of the smallest radicles of the veins can readily permit of the entrance of the organisms, or again in rare instances the bacteria may be carried within the protoplasm of the leucocyte.

One can understand the deposit of bacteria in the cancellous tissues of bone because of the vascular arrangement of this tissue, but there seems to be but little or no anatomical reason for this location in the synovial sac. One must therefore look to the bacteria themselves for a cause of this localization. That certain bacteria have a predilection for certain tissue is of course possible, as it is known that certain cells have an attraction for certain bacteria. Chemo-taxis then may be a factor.

It may be assumed that under like conditions all bacteria should act similarly in every individual, but practically this does not occur. In part this difference in action can be explained by the immunity present in certain individuals to certain types of infection. A full discussion of this phase of the subject lies beyond the limits of this paper.

It has been established by numerous observers that bacteria entering the organism through the tonsil or gums, the accessory sinuses, alimentary or respiratory tract, as well as from furuncles or larger abscesses, may produce infection of the synovial structures of a joint. Only recently through the work of Rosenow, Billings and others has sufficient attention been paid to infections about the teeth. Other points of infection have been longer recognized, and it is to the dental field and the prophylactic measures of the future that attention must be directed. Culver (*Jour. A. M. A.*, Vol. LXVI, No. 8, P. 553), finds that

chronic infections of the prostate and seminal vesicles seem to be partially or wholly responsible for many instances of subacute and chronic arthritis; also that drainage of the focus of infection in the prostate or vesicles by expression or otherwise, together with raising of the antibody content of the patient's blood by inoculation of killed organisms, is apparently advantageous in the treatment of these conditions.

PATHOLOGY.

It is scarcely necessary to enter into a detailed description of the changes occurring in the synovial tissues of a joint following their infection by bacteria, since such descriptions are to be found in the classic literature. It is sufficient to say that the local reaction will depend upon the character and number of organisms present, and upon their virulence. Certain forms tend to produce rapid distention of the joint with fluid, which soon becomes cloudy and promptly terminates in suppuration; while others result in a simple serous effusion carrying a few leucocytes in some instances, and in others presenting a considerable amount of coagulable lymph resulting in plastic deposit upon the synovial fringes which may eventually become organized. In this form no pus is found. In still other types a large amount of plastic material is produced with but little fluid. Such cases usually result in the formation of firm bands between the synovial fringes and ligaments, and partial fixation of the joint occurs. As long as the inflammatory changes are limited to the synovial membrane the term "synovitis" is applied to the condition. In certain types, however, where the distention of the joint is great there results the relaxation of the ligamentous tissue, and the articulating surfaces become involved in the inflammatory process. Under these circumstances a true arthritis develops. In the articulating cartilages the widest variation in the pathologic changes are noted, varying from the simple roughening of the cartilage to its complete destruction and the invasion of the subjacent bone as well. A septic arthritis of this type results sometimes from a suppurative synovitis. The more usual termination of non-suppurative inflammation of the synovial structures is in recovery, with absorption of the fluid and subsidence of the swelling. In some of these cases a few small bands remain, which cause but little impairment of the joint function but which give to the examining hand a feeling of soft crepitus. In some instances the fluid which has been poured out into the joint remains for some time and the slightest amount of traumatism will readily produce complete distention of the synovial sac. The synovial fringes in such a case are oftentimes thickened, showing evi-

dence of proliferation and in some instances movable bodies are found in the synovial sac. The irritation of these bodies, when present, always results in hydrarthrosis.

SYMPTOMS.

The symptoms of acute synovitis are pain, heat, and distention of the sac, with fluctuation. If the process is very acute and the distention great the pain is severe, particularly at night, and is increased upon motion or pressure over the swelling. The patient may waken suddenly from sleep, since relaxation of the ligaments permits movement of the joint, which causes sudden spasm of the muscles and great pain. In purulent types of synovitis the symptoms, of course, are exaggerated. There is always some local heat present in these cases, being greatest in the suppurative type. Some cases are so mild that the local symptoms are confined to swelling and slight tenderness. In others the distress is almost unbearable. In the milder cases the bodily temperature is only slightly elevated.

PROGNOSIS.

Most cases of synovitis result in recovery without great impairment of joint function. Some of the more severe types, however, leave more or less permanent damage. If the distention has persisted for a long time the ligaments become relaxed and the joint is less stable and more liable to suffer from minor injury, with a tendency to chronic hydrarthrosis (chronic synovitis).

In suppurative and septic types, where the infection is virulent, the case may progress to a rapidly fatal issue, since the absorption from the synovial sac is very prompt and death may result from sepsis.

DIAGNOSIS.

The diagnosis of this condition can usually be determined by the presence of the characteristic swelling which results from the distention of the synovial sac, its sudden onset and the character of the pain, as well as the fact that one joint is usually involved. It is differentiated from arthritis by the fact that in cases of arthritis there is more diffuse swelling, more severe pain, and greater disability. There is also usually tenderness over the bone in arthritis. An X-ray examination will usually show bony involvement in the latter. Simple serous synovitis can be distinguished from the suppurative type by the higher range of temperature and the more severe pain and the greater local heat in the latter condition. Aspiration will make the differentiation complete.

TREATMENT

Treatment may be classified as prophylactic, palliative and radical. The prophylactic

measures consist in keeping all open wounds into the joint free of bacterial infection. Careful attention should be given to the teeth and all small pockets containing pus in any portion of the body should be drained to prevent the bacteria entering the blood and there being carried to the joint.

Palliative measures consist in putting the part at rest and the application of heat or cold as the case may be. The milder cases may be very successfully treated by the application of adhesive plaster strapping. When the symptoms are more severe, it may be necessary to apply a well-padded splint and snug bandage.

In the nonsuppurative cases simple aspiration gives the patient great relief, and if followed by proper bandaging will probably be all that is necessary to terminate the case favorably. In suppurative cases aspiration, followed by the injection of 2 per cent. formalin in glycerine, will oftentimes bring about a cure. In the more severe suppurative types if this method fails, or if the process is so active that the life of the patient is endangered, prompt incision and drainage of the joint cavity should be employed. Some observers recommend the use of joint irrigation after the open operation, while others content themselves with simply providing free drainage. In any event the drainage must be free and great benefit results from the application of hot packs after the drainage has been obtained.

During convalescence the support of a bandage will be found beneficial, and the employment of massage and passive motion will hasten the restoration of the function of the joint.

Experimental Nephropathy from Bacterial Poisons.—In the course of experiments to test the possibility of producing iritis in rabbits by the intravenous injection of some bacterial poisons, kidney lesions were discovered by Stoddard and Woods. Staphylococci and streptococci were injected. They produced a type of epithelial degeneration in the kidney, usually regarded as very acute. A tendency to a disintegrative degeneration of the epithelium of the first division of the proximal convoluted tubule may be common to all cases in which the products of destruction of bacteria reach the blood stream.

Iodin Content of Foods.—The data collected by Forbes and Beegle show that iodine is not by any means a constant constituent of foods, that when present it is usually found in exceedingly minute portions, and that, in general at least, it must be regarded as an accidental constituent in the sense of standing in no vital relation to the growth of the food products.

FORCEPS DELIVERY.*

By H. E. PRATHER, Hickman.

"The obstetrical forceps is an instrument designed for the extraction of the child, under certain conditions, when it presents by the head." (Williams). For general purposes the Simpson forceps is probably the best and is the favorite instrument in America and England. The Tarnier Axis-traction forceps is the most commonly used in France and the Naegele in Germany and Austria.

Axis-traction, which means pulling in the axis of the birth canal, may be effected with the ordinary Simpson forceps by placing one hand just in front of the lock, pressing downward and backward with this hand until the pelvic floor is reached, which assists materially in bringing about rotation of the head, then with the other hand pulling upward and forward. In the absence of the Tarnier forceps a very satisfactory axis-traction appliance may be obtained by passing a very sterile linen tape from without inward through slits in the middle of the cephalic portion of the blades of the Simpson instrument, which serves as tractors in the downward and backward direction of the birth canal.

Dr. Davis says, "The forceps is the most commonly used instrument of surgery, the most frequently abused, in safe hands the safest, and in incompetent hands the most dangerous and bloody. It is to be used to save the lives and health of mother and child."

On the part of the mother its most frequent indication is failure of the expulsive efforts from threatened exhaustion, as when her nervous energy fails and in spite of one or two doses of pituitrin, labor ceases. Other conditions are eclampsia, acute oedema of the lungs, heart lesions with poor compensation, haemorrhage from premature separation of the placenta, intrapartum infection and acute infectious diseases. In some cases with normal expulsive efforts the resistance of the vaginal outlet is so great that no progress is made. In these uncomplicated cases it is a good rule if no progress has been made after two hours of satisfactory second stage pains to use forceps.

As to the child, forceps should be used for the prolapse of the cord which cannot be replaced, premature separation of the placenta, long continued labor with undue pressure, rise of temperature in the mother, a foetal heart sound of below 100 or above 160 to the minute, or escape of meconium in vertex presentations which indicates interference with the placental circulation causing a paralysis of the sphincter ani; and even after sudden death of the mother.

Before forceps can be safely applied the

head must have engaged and molded itself into the pelvic brim; the cervix must be dilated or dilatable with the hand to a diameter of nine or ten centimeters (four inches); the membranes must be ruptured; the bladder and rectum emptied; the head of the child must be neither too large nor too small and the pelvis not contracted which can best be determined by pelvimetry.

Neither should forceps be applied in a brow presentation, partial bone presentation, when the chin is directed toward the hollow of the sacrum; nor in pathological conditions of the child making its delivery impossible.

Having determined that the use of the forceps is positively indicated the patient should be placed upon her back across the bed or upon a table, the thighs supported and rotated outward by assistants, or by a sheet rolled the long way, placed under the patient's neck, over shoulders, across outer side of flexed thighs and tied just below the knees. The hair is shaved or trimmed from the external genitalia which are thoroughly washed with soap and water and bathed with equal parts of iodine and alcohol. The patient is completely anesthetized, then catheterized, limbs wrapped in sterile sheets, a piece of gauze folded over a strip of adhesive plaster is fastened by the plaster over the anus. The vagina is now wiped out with sterile cotton saturated with a 1 per cent. lysol solution. The operator, seated in front of the patient, wearing sterile rubber gloves lubricated with sterile vaseline or oil, inserts the fingers of the right hand, and if need be the whole hand into the patient's vagina, locates the posterior ear, then without removing the examining hand but retaining it as a guide for the blade of the forceps between the head and the cervix, takes the handle of the left blade of the forceps, which have been previously boiled for twenty minutes in a 1 per cent lysol solution, and holding it between the thumb and two fingers of the left hand as you would a pen and parallel to Poupert's ligament allows it to glide gently into place over the ear. The left hand is now used as a guide for the right blade and the blades by gently manipulating are locked. Intermittent traction during uterine contractions should be made downward and backward in the direction of the birth canal until the perineum begins to bulge. The handles are now elevated as the head emerges until they come almost in contact with the abdomen, but too much pressure against the pubes should be avoided, as it may rupture the urethra or even injure the pubic bones. Surgical anesthesia will go far toward preventing laceration. After the head has been delivered the forceps are removed and the posterior shoulder brought down and delivered in the usual way.

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In some cases of deficient rotation, which cannot be rotated by the hand, the narrow solid bladed forceps are applied to the sides of the child's head and by gentle and intermittent use, the occiput is slowly rotated to the same side as is the child's back. After this has been accomplished it will then be necessary to reapply the forceps. When the forceps can not be properly fitted to the head in these cases, it will be good practice to introduce the instrument along the sides of the pelvic cavity, make intermittent traction in the axis of the parturient canal and between each application of traction allow the blades of the forceps to separate and the head to rotate within the forceps.

When the occiput rotates posteriorly, some advise version if it can be accomplished but if not, the occiput can be delivered posteriorly in extreme flexion, but will be attended with some perineal laceration.

In breech presentations it will not be necessary to apply forceps to the after coming head.

Improper use of the forceps may produce serious lacerations of the pelvic floor, injuries to the symphysis or coccyx or even a rent into the peritoneal cavity.

The child's death may be caused by a loop of the umbilical cord being pinched by the forceps. In difficult forceps operations the face and head of the child may be seriously bruised and lacerated, fracture of the skull having even occurred. Facial paralysis due to pressure over the stylomastoid foramen through which the facial nerve passes is not unusual.

I desire to acknowledge my indebtedness in the preparation of this paper to the teaching of Dr. Williams of Baltimore and to Dr. Davis of Philadelphia.

THE PRESENT TREATMENT OF PUERPERAL INFECTION.*

By J. B. LUKINS, Louisville.

Less than a century ago in the large obstetrical clinic in Vienna the expectant mothers on bended knee begged that they be attended by the midwives rather than the doctors and students.

It was a matter of common knowledge that there were five times as many deaths from the fever following childbirths, in the doctor's ward as in that visited by the midwives. This supplication was heard by the leaders of scientific thought around the world and the answer after many years of difficult research work, was given by such men as Semmelweis, Koch, Pasteur and Lister until now by gradual development and improvement thousands

of lives are saved every year by the application of modern prophylactic measures.

There are records that the ancients while absolutely ignorant as to the cause practiced means of preventing this dreadful fever by dusting the vulva with aromatic herbs and dipping the patient immediately after delivery in a stream of running water. The value of prophylactic measures was demonstrated in the clinic of Semmelweis after one of the profession had died from a fever caused by a finger prick while holding a postmortem.

The fever in this patient, and later the autopsy findings, proved identical with those of puerperal fever and Semmelweis, though the object of ridicule at the time, demonstrated that the infection was carried on the hands of the students and doctors. By washing the hands and dipping them in chlorine water previous to the examination of the patient the mortality was reduced from 11-4 per cent. to 1-2 per cent.

Puerperal fever is nothing more nor less than an infectious wound disease. The lochial discharge is a wound secretion. The same bacteria found in a surgical wound are also found attacking the puerpera. The pathology of puerperal wound is the same as that of surgical infections but many variations exist because of the physiologic changes by pregnancy of labor and the puerperium and of the different anatomic structures of the parts.

When these plain facts are thoroughly understood by the profession the first step will have been taken to the working out of a proper way of management of these too often overtreated cases and will, it is hoped, eventually lead to the discovery of a specific cure for both.

So much can be done by prevention and so little by treatment that our efforts should be concentrated on asepsis and on a physiologic conduct of labor. The prophylactic treatment of puerperal infection is the same as the rules for the conduct in an aseptic way of any labor case.

We would think that after 50 years of education that puerperal infection would be almost abolished but statistics show that in 1914 nearly 8,000 women died in the United States from fever following childbirth.

The treatment of puerperal infection may properly be classed as follows:

- a. Local treatment,
- b. Surgical treatment,
- c. Specific treatment,
- d. General hygienic and supportive measures.

When following delivery our patient has a chill followed by fever or whether we note a gradual slow increase in pulse rate and temperature puerperal infection should at once be

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thought of. By careful clinical examination we should as far as possible exclude all other possible causes for the symptoms. The prompt administration of a calomel and saline purge followed by quinine and ergot every three or four hours for several doses may almost entirely clear the diagnosis.

The uterus will be stimulated to contraction and thus often expel putrid material in the way of pieces of membrane and placenta or blood clots.

Some of the lochial discharge should be sent to a laboratory for examination and a careful urinalysis and differential blood count be made. An ice bag over the uterus is often of marked service.

The local treatment of puerperal infection is the attempt to arouse from the vagina and uterus bacteria and their toxins either by douches or the use of the curet.

Whether or not these measures shall be employed has in recent years been the subject of very spirited discussion in the profession. The trend of the teaching to-day seems to be altogether opposed to any local treatment whatever. DeLee of Chicago, in his latest textbook says that being convinced that it does more harm than good he has practically dispensed with local treatment, that only if the woman is having uterine hemorrhage does he interfere and then to pack the uterus with two per cent. iodoform gauze. This view is to most of us somewhat extreme and in fact is opposed to such authorities as Hirst and Williams.

Personally, I am not ready to say that every case should be let alone in the way of local treatment, certainly I am not in favor of mechanical cleansing of the uterus in every case. It is impossible to tell at first just which case will be mild and which severe. If you know positively that there are retained secundæ in the uterus or if their presence is indicated by the passage of foul smelling pieces of membrane or placenta then nothing could be more sensible or more sure of beneficial results in the beginning than the removal with the hand of these retained parts. If such evidence does not exist then a daily vaginal douche of lysol solution should be the extent of the local treatment.

Curettment should never be done and it is exceedingly doubtful if intrauterine douches are ever of any benefit and may after the first few days be a source of grave danger. By curettage the thin protecting barrier of leucocytes built by nature on the endometrium is destroyed and the bacteria themselves liberated into the blood current.

It has been demonstrated that streptococci thrown into the cavity of the uterus of the rabbit may be found in the liver in six hours. If this is true in the human then the operation

is at least useless, if not positively harmful. The curet will soon be recognized as a criminal instrument in the treatment of simple puerperal infection.

The tendency to do a hysterectomy in every case is much less than formerly. If the infection is streptococcal the termination is almost invariably fatal, and if due to other bacteria recovery is the rule from the expectant plan of treatment.

The indications for this operation are difficult to determine. There is a natural reluctance in regard to performing hysterectomy in incipient cases for the most astute diagnostician is unable to tell if the infection will progress or remain localized and the patient get well while on the other hand if we wait for the infection to reach the confines of the uterus, as shown by local symptoms, operation as a rule will result in stump infection and subsequent peritonitis.

Furthermore the infectious germs may rapidly be propagated in all directions, into the tubes, veins and lymphatics and upon the peritoneum. Cases of this type are inoperable.

Ligation of the pelvic veins is another operation practiced to a limited extent by some obstetricians. It is contraindicated in acute cases and is only of doubtful benefit in the subacute or chronic.

In 1909 Dr. Williams collected 56 cases. He found a gross mortality of 43.9 per cent when the veins are attacked from the peritoneal cavity and he compares this with the general mortality of pyemia which he places at 66 2-3 per cent. If the spermatic veins alone are involved the outlook for the operation is more favorable than if the hypogastrics are affected, if both are thrombosed, or if the infection extends into the cava, operation is hopeless.

The same objections may be urged against this operation as against hysterectomy, in that it is so very difficult to select the proper cases for operation.

There are, however, certain surgical conditions arising in the course of a prolonged case in which the indication is positive and definite, as soon as the perimetritic abscess can be made out by palpation it should be opened rather than to let it rupture spontaneously. When the presence of pus tubes or ovarian abscesses can be demonstrated, their removal is urgently indicated for as long as they remain the patient will remain in a septic condition. Whether such conditions should be attacked by laparotomy or puncture through the vagina will depend upon their character.

If freely movable laparotomy should be performed; while on the other hand if adherent and readily accessible from the vagina, va-

ginal puncture with subsequent packing of the abscess cavity with gauze is to be preferred.

In 1895 Mamorek startled the world by announcing that he had discovered an antistreptococcal serum. The early reports were very flattering but after being largely employed by the profession in general the results are unsatisfactory.

The exhaustive report of the Committee of the American Gynecological Society showed in 352 cases a mortality of 20.74 per cent. Out of those in which the streptococcus had been demonstrated, the mortality was over 32 per cent. This report must be considered most discouraging in view of the fact that most cases undergo spontaneous recovery if let alone.

A few years ago our hopes were again raised that in vaccine therapy a specific remedy had been found. We were taught that by injecting into the body a material made from specific germs that the antibodies to that specific infection would be sufficiently increased to destroy the invading organism.

The literature has been full of reported cures of puerperal infection with vaccines, both autogenous and stock but all the highest authorities are agreed that in most cases vaccine therapy is useless and may be harmful. Polak, however, recommends a mixed stock vaccine in doses large enough materially to increase leukocytosis.

Personally, I believe vaccine therapy has its field in the treatment of the various forms of infections. In colon bacillus and staphylococcal infection the benefit results can hardly be questioned. In suppurating cellulitis and thrombo-phlebitis, in fact many localized chronic infections it is the remedy of choice. Autogenous vaccines are to be preferred but stock vaccines possess the advantages of being easily procured and ready for immediate administration. Investigations continue in the search for a specific remedy and the latest addition in this direction is that of a substance known as electrargol. It is described as "colloidal silver treated by passing through it an electric current which causes the ions to wonder in the solution according to strict physical laws, which allow each ion separately to accomplish its germicidal and fermentative action."

We are told further than "electrargol does not go into insoluble precipitate either with the albumins or with the chlorides of the blood plasma hence its effectiveness antiseptically is retained in the blood stream.

Being a colloid it does not, like a crystalloid, pass through animal membrane by dialysis which would permit of its rapid elimination but remains long in the tissues performing its antiseptic duties. Dr. G. V. Brown of De-

troit, reports that in rabbits injected with 1-2 c.c. electrargol the white cells were raised from 6,000 to 10,000; the polymorphonuclear leukocytes from 50 to 60 per cent. to 80 to 90 per cent. Rabbits injected intraperitoneally with 1-2 c.c. streptococcus emulsion promptly developed septic signs and died in a few days.

In those which were injected with 3 c.c. electrargol and then 12 hours later with 1-2 c.c. streptococcus emulsion, no symptoms developed and after 28 hours the blood culture did not show any growth. He reports 5 cases treated with electrargol with gratifying results. All of these were bacteremiae two of which were streptococcal.

The preparation comes in bulk, also in ampules of 5 and 20 c.c. and with each ampule it is advised to give an ampule of normal salt solution.

The majority of cases of puerperal infection recover. Nature itself by the phagocytic action of the blood is able to overcome the invading organism. The most rational treatment then with our present knowledge and lack of any proven specific is to assist nature in every possible way.

Plenty of fresh air and pure water are two essentials. Careful nursing and appropriate symptomatic medication will make the patient more comfortable and thereby conserve her strength. As much good nourishing food as can be well borne should be allowed. An ice pack over the uterus is usually helpful. The cold tends to promote uterine contraction and perhaps helps to inhibit the growth of bacteria while the administration of ergot as mentioned above aids in promoting contraction and in furthering the process of involution by closing the lymphatics of the uterine wall. The administration of salt solution either subcutaneous or intravenously is a supportive measure of undoubted utility.

Alcohol in large quantities is still used and has many warm advocates. Granting there is merit in all these measures suggested we must admit that at best curative treatment is only a feeble attempt upon our part to combat the ravages of a terrible malady that carries off one in every four hundred women delivered at full term and leaves as hopeless invalids one-tenth of the remainder.

May I not close this paper with a plea for the general adoption of simple but effective precautionary measures. It has been said that in five years the money spent on tuberculosis would entirely eradicate puerperal infection. When we have in every case of obstetrics a nurse who knows how to be surgically clean and the attending physician uses sterilized rubber gloves together with the usual aseptic precautions puerperal infection

will be so rare that it will cease to be of sufficient interest for discussion in medical societies.

DISCUSSION.

Edward Speidel, Louisville: I enjoyed the papers very much, and Dr. Prather's paper on forceps will be the one I will discuss first of all.

I would like to emphasize the fact especially that improperly used, the forceps is the most dangerous instrument that was ever devised, in consequence of the after-effects which are shown up in later years of the improper use of this instrument. Remember, that neurologists claim now, that many cases of epilepsy are the result of forceps deliveries of the individuals at birth, consequently it shows you what the effects of undue compression with the obstetrical forceps at the time of delivery will have upon the future life of the child.

The important thing in forceps delivery, and I take it now that we are speaking of forceps delivery in private houses where we have only ordinary surroundings, is proper preparation in every respect for forceps delivery, and fortunately these proper arrangements can be easily made in the humblest of homes. Proper preparation, of course, includes proper sterilization of the instrument and whatever else is to be used in connection with the forceps operation, and every general practitioner doing obstetrical work should have in his armamentarium the small copper sterilizer found in surgical instrument stores, and should be put into his bag and serve as a receptacle for the forceps and other things that he needs in his outfit, and in consequence will not increase the size of his bag. This sterilizer is necessary because of the inability to sterilize the obstetrical forceps in the ordinary household utensils. Practically, the only thing available for this purpose in the ordinary home is the large dish pan, and when properly filled with hot water, it will take so long to sterilize the instruments or gloves, and perineorrhaphy instruments, that this important feature at the outset may be neglected.

The second important feature is that the forceps operation be done under proper anesthesia, and you should always take sufficient time to call for an assisting physician to help anesthetize your patient properly, because if the patient is not surgically anesthetized the operation will be hurried and the patient will be injured.

The third necessity is the proper place for the operation. A forceps operation should never be performed upon the sagging bed which you find in every household, even if it is an apparently simple operation.

You will find in most instances more traction is necessary than you at first thought, and you will be compelled to work in an uncomfortable position and improper delivery will result. Fortunately the poorest home has the most splendid

operating table for forceps delivery, and that is the ordinary short kitchen table. Your patient can be led to the kitchen table, can lie on it and it is generally long enough to put her head at one end and hips at the other, and her feet rest upon two chairs at the end of the table. The ordinary oil-cloth that generally covers this table can be drawn to the end of the table and allowed to hang in a foot tub or bucket of some kind, serving as an efficient drain, and the patient can be anesthetized upon the table, properly. When ready to apply the forceps, the legs of the patient are held up by two members of the family and the operation proceeds. With this position you have one advantage which you ordinarily do not have on the operating table in a hospital, and that is this: when the head of the baby is about to be drawn out of the vulva, the best relaxation of the perineum is obtained by lowering the legs of the patient, and the assistants that hold the legs at this time can be directed to let the legs of the patient rest upon the chairs again and the best delivery with the least danger of laceration of the perineum can be effected in this manner.

Now, as to the application of the forceps, high forceps operation need no longer be considered. It is so dangerous that even experts in obstetrics do not perform it, consequently we have to deal with the mid-pelvic operation and the operation at the outlet of the pelvis. Let it be understood when a forceps operation is necessary, that something abnormal is present, and you had better find out in the mid-forceps operation whether you have a funnel pelvis before you apply the forceps blades, because if you have a funnel pelvis, a condition in which you have narrowing of the outlet, with proper diameters at the inlet, even with extreme traction, you will not be able to deliver the patient properly. Under such circumstances the proper treatment is not only forceps delivery but pubiotomy in addition before delivery is completed.

A very important point in all forceps deliveries whether mid-forceps or forceps delivery at the outlet, is proper traction in the beginning. In all cases, it is necessary, first of all, to make traction downward and backward in the axis of the superior strait in order to get the occiput under the symphysis pubis. The mistake is made of making traction forward too soon, pushing the occiput against the symphysis pubis and preventing any advance in that way. When it comes to the exit of the head from the vagina, the head should be drawn out; it should not be pulled out of the vaginal canal. By that I mean that the forceps should be held with the left hand and traction should be made practically outward, always keeping in the mind's eye the blades of the forceps in the middle of the child's head. Do not turn the handles up toward the abdomen as is shown in most illustrations in textbooks. If you do, the lower part of the blade butts against the enormously overstretched levator ani muscles,

and you have the worst kind of laceration you can possibly have—a subcutaneous laceration of the muscles of the perineum. The head should be drawn out with the forceps using the left hand and pushed up toward the symphysis pubis with the right in this way you will be able to deliver the baby without injury to the mother.

As to the important subject of puerperal infection, Dr. Lukins splendidly brought before you practical studies in the treatment of this condition at the present time which upset everything we have done heretofore. The treatment of puerperal infection at present is so simple that, as Dr. Bloodgood said last night and yesterday afternoon, on account of its simplicity it will hardly appeal to you and will hardly be sufficient for your patients because they will possibly complain if you do not do enough. In the past we have done too much, and the first thing we have to learn is to undo nearly everything that we did before. We have to abolish absolutely the use of any kind of curet, sharp or dull, in the full-term uterus, because by using a curet in the uterus we simply disseminate infection and make of a local process a general process which harms the patient very much.

The proper treatment of puerperal infection, according to my idea at the present time, is this: of course, if at the time of delivery you know that you have left a large piece of placenta and membranes in the uterus, leave it alone unless it causes hemorrhage. So remember this now: in any medico-legal case at the present time a physician is not likely to be censured for leaving a piece of placenta in the uterus. In a malpractice suit against one of our members in Louisville recently I brought DeLees' textbook into court and showed that it is not improper in certain cases to leave a piece of placenta in the uterus. It is safer for the mother to leave the placenta untouched rather than remove it and cause trouble. If a piece of placenta is left in the uterus it may be left there undisturbed unless it causes hemorrhage. If it causes hemorrhage, then pack the uterus with iodoform gauze loosely and re-pack it until the piece of placenta comes away. That is the treatment practically in these cases that we formerly called sapremic.

In the septic cases there should be no vaginal or intrauterine manipulation at all. Even purgation by the mouth should not be used, but the bowels emptied when necessary by low enemata. The patient should be placed in Fowlers position and normal saline, normal sodium citrate or Fisher's solution should be administered by the drop method per rectum. Supportive measures alone should be used, no drastic medication having any marked effect. The sera and vaccines seem only to be beneficial in undoubted cases of colon bacillus and gonococcus infection. I have seen no results whatever from the use of streptococcus serum in any of our cases. In a very serious and protracted case of septic puer-

peral infection we finally resorted to blood transfusion by the sodium citrate method, with splendid effect and final recovery of the patient, and I offer this measure as a means of treatment in severe cases, that is not as yet mentioned in our text books.

W. W. Anderson, Newport: It has been stated that every obstetric case should be regarded and treated and prepared for and handled as a surgical case. Let me remind you that it is not therefore absolutely certain that the surgeon is the man who should take care of it, because the surgeon is too habitually in contact with pus he is likely to carry it around with him. In spite of his knowledge of the subject, I have seen more serious puerperal infections from the hands of surgeons than the hands of general practitioners. If the surgeon regards every obstetrical case as a surgical one, he should prepare aseptically for it.

The remark of Dr. Speidel as to epilepsy being caused by forceps I would qualify a little bit. I do not think forceps will cause epilepsy if properly applied and not used at all unless there is reason. The reason usually is a disproportion between the size of the head and the pelvic diameters, and it will require considerable effort on the part of nature to deliver that child without forceps, just about the same pressure the forceps would exert. To get through the narrow diameters will require pressure anyway. The thickness of the blades of the forceps does not materially increase the diameter of the fetal head. The prolonged pressure of nature undertaking to expel the fetal head through narrow diameters is more likely, I take it, to cause epilepsy than the prompter delivery by forceps. To be sure, I am not advocating pulling out the child that can be delivered by nature through ample diameters, nor tearing through an undilated cervix or anything of that kind.

There is just one other thought not mentioned in the use of the forceps, that is, the use of the forceps as a means of producing rotation in occipito-posterior positions that refuse to rotate of themselves. In that connection let me ask you to make your diagnosis of the position early while the head is as high as you can reach it, and make the diagnosis. By a careful examination it can be made high as a rule. You will find the occipito-posterior positions vastly more common than the text books have said or than you have been taught. Nature rotates them herself in most instances, but in some instances she does not rotate them, and the use of a single blade will fail to rotate them, and manipulations with the fingers within and hand externally will fail to rotate some of them. In such cases as that, if you will apply forceps in the mid-pelvic position and bring the head down till the perineum is bulging, by that time you can readily turn the handles of the forceps almost perpendicularly, almost at right angles to the mother's body, and then use the forceps as a lever and swing the

head right around in the direction that it should naturally rotate. You will turn it not three-quarters the way around, but one-quarter of the way, converting third into the second position, and fourth into the first position. I did not believe that could be done until Dr. Gillespie, of Cincinnati, mentioned it, and it was not long afterwards I tried it in an obstinate case, and have done it a number of times since without great difficulty, and I would urge you to try it.

B. J. O'Connor, Louisville: I do not know that I can add anything to the subject of the use of the forceps so ably presented, but I would like to say something regarding the subject of puerperal infection. There are a few ideas that have occurred to me that have not been touched upon by the essayist or by those who discussed the paper that it would be well to call to your minds. The most important I think is the immediate application after birth of antiseptics, such as iodine, to local traumatism in the birth canal; I mean minor tears of the mucous membrane either at the perineum or at the cervix. Make it a routine to use iodine locally, and I think most of your puerperal infections will be avoided in that way. Dr. Speidel spoke very properly of the Fowler position and Murphy drip. I think he overlooked other things which are equally important, namely, the items of food and fresh air. Puerperal infection, like infections in other parts of the body, is usually a long drawn out affair. The patient does not die in a short time—in fact, death is rather the exception. There is a great deal more morbidity than mortality, which is a point that was not mentioned, I think, by the essayist. So remember, if you keep up the patient's strength and do everything you can to bring about natural protection, natural immunity, whether you do that without natural agencies or go to the extremes of drugs lies with you, but do not forget nature's reliable means.

This subject of puerperal infection is of such importance that I think this society ought to have a committee appointed or some commission appointed, to formulate a set of simple rules to act as a sort of guide for every man in general practice in the State, simple rules in regard to the prophylaxis of infection, just as our modern hospitals appoint a committee to formulate rules as to the disinfection and handling of instruments and dressings. While I think the majority of doctors are careful in regard to themselves, I do not believe we pay enough attention to the care of patients or to their surroundings, the bed and other things, and I really believe the society would make a progressive step to-day if a committee were appointed to suggest some set of rules to act as a guide in the conduct of every maternity case.

W. E. Reynolds, Hopkinsville: It makes me feel a little embarrassed to take issue with the gentleman who believes the source of infection is due to any negligence of the accoucheur in

preparing and treating his patient. This idea, I not only wish to take issue, but condemn, because if generally known by the laity, that the physician contributed the cause of infection to this source, nothing would please the one-horse lawyer better than this to institute a litigation, at the expense of the innocent doctor.

In opposing his unanimous belief of infection conveyed by the accoucheur, I do not wish to convey the idea that I am opposed to strict cleanliness and asepsis, but the source of infection, and until we find this, and remedy it, we may expect to have puerperal sepsis. I contend that it is not the hands of the accoucheur or any other appliances amenable to his care, but the condition of his patient, for which he may not be responsible.

In the first place before birth, it would be a matter of almost impossibility to infect a normal vagina with mucous membrane intact. If it was, then examinations and manipulations, other than parturition would result in infection. But with parturition, we may have lacerations, abrasions, and denuded surfaces, but with, and following delivery, we have the liquor amnii, a very tenacious aseptic fluid, and especially so to a raw surface, which is a complete protection to the injured parts for thirty-six or forty-eight hours, until the natural process of the blood can take care of the injured parts. An application of iodine or any other preparation would be premature, and liable to do harm, as it would remove nature's protection (liquor amnii) and would only last for a few hours and then leave an open wound unguarded against infection.

First if we have had a normal labor without comparatively any hemorrhage, we will have a plastic lymph supplied by the healthy blood beneath this liquor amnii, I might say temporary membrane. In this case the lochial discharges will change from a red to a glary mucus in five or six days. This I term recovery by first intention. The second recovery is where we have a patient not so well, may have lost some blood during parturition, consequently the blood being impoverished does not supply so readily this plastic material, and undergoes a breaking down of fibrinous tissue, forming pus, the second effort to protect the raw surfaces. The lochial discharges changes to pus, and instead of days in recovery, may be weeks or a month. The third effort of nature for recovery is by autogenous protection. This is after our patient has lost a considerable amount of blood, and the blood so impoverished as to not be able to furnish the protection as the two proceeding characters, consequently we have an unprotected surface, to the amount of blood, and absorption of the infectious matter that is being discharged from the uterus. Nature tries to relieve herself by washing away the poison, with the watery portion of the blood, through the open pores and unprotected surfaces, at the same time absorbing this

infectious matter. And if our patient is not too much exhausted by the loss of blood, she will make her recovery through an autogenous battle.

The lochial discharge of this patient will change any where from twelve hours to several days (owing to the amount of blood lost) from a bright red to a yellowish offensive watery discharge, with all symptoms of puerperal infection.

This and no other way can we have puerperal fever. I have been in the practice of medicine for forty years and I have never had or heard of a case of normal labor with comparatively no hemorrhage, that ever had puerperal infection.

If you will look to the cause of puerperal eclampsia and remove that cause, you will avoid hemorrhage and save your patient from puerperal infection.

In conclusion let me say, after following science through all germ changes, and biological factors, we come to the conclusion that common sense, after all is the foundation of all non-prejudicial conclusions. Then let the germ be on the hand or in the head, matters not so we avert the cause of the infection.

J. T. Reddick, Paducah: I regret that I did not hear these papers, but I can at least discuss some of the remarks of those who have taken part in the discussion. I quite agree with Dr. Anderson in the fact that these cases of puerperal infection are not cases for the surgeon; but I do not agree with him when he says the surgeon is likely to convey infection to others by reason of his constant, frequent contact with pus, because I do not think any modern surgeon with his sterile gown and sterile gloves and all the surgical technic, with which we are acquainted now, is any more apt to convey pus germs to his patients than the general practitioner who is doing obstetrics. Dr. Speidel certainly brought out a most excellent point in his discussion of this paper, one especially that has not been spoken of to any great extent, and that is putting the patient in the Fowler position and the use of the Murphy drip. I have been practicing medicine for a long time and have had a rather extensive obstetrical experience. I practiced before the days of asepsis as it is known to-day. I practiced medicine when we were taught, and in fact it was taught until recently to use intrauterine irrigations and to use a dull curet, which were considered the proper treatment for puerperal infection. Some years ago I decided in my own mind that it was not right treatment because I had seen ill effect following that kind of treatment. I have not been so imprudent as to use a sharp curet, but have used a dull curet and intrauterine injections of mild antiseptics. We often see or have violent rigors and extremely high temperature following that kind of treatment.

As a means of prevention of puerperal infection, there is nothing better than the careful and clean repair of every laceration about the va-

gina and vaginal outlet; hence I think the obstetrician should in all cases, no matter how trivial or how insignificant they may appear, repair these tears at once carefully and in a clean way, no matter how insignificant they are even through the mucous membrane.

With regard to the use of the forceps, I do not believe that the time will ever come when we will discard them. We cannot do it. Some of the advocates of pituitrin have suggested its use and that it, together with Cesarean section, would eventually do away with the use of forceps. I am an earnest advocate of pituitrin. I believe the judicious, careful and conservative use of pituitrin will in a great many cases aid us to get through with our obstetrical cases without the use of forceps; it will increase uterine contractions and enable the patient to deliver the baby, whereas before the use of pituitrin we were compelled to use forceps.

I have enjoyed this discussion very much. I regret I did not hear the papers, but some valuable points have been brought out in these discussions, and perhaps more will be brought out.

A. D. Willmoth, Louisville: I only wish to discuss one phase of the second paper that was read by Dr. Lukins on puerperal sepsis. If I caught the purport of his remarks correctly, he laid the stress of infection at the door of the doctor. In other words, in his closing remarks he said that if we had expended as much money towards the prevention of puerperal infections as we did towards prevention and education of the public along tubercular lines, we would have eradicated puerperal infection before this.

I believe that at the present time, with the Workmen's Compensation Act enforced, in a short time damage suits will be increasing on every hand, when there will be multitudes of hungry lawyers looking for something to do, and damage suits will be brought against doctors far more frequently than they have been in the past. This being true, if this remark was allowed to go by unchallenged and a few copies of the Journal should fall into such hands where they can be used in damage suits, I think it is possible we might be very materially injured thereby. Therefore, I wish to say about this indictment brought against the doctor by that remark, if any can be brought at all, he failed to take into recognition the number of women who have infections lurking within their pelves about which the doctor knows nothing. If we are correct in following the figures of the modern sociologists in the study of social and venereal diseases, about one man in every four has an infection the result of gonorrhea, taking the country at large. This being true, there is scarcely a doctor who cannot recall a number of cases of puerperal infection that have followed one after another in the wives of men whom they know had been infected, or who had a distinct attack of urethritis in years gone by. We ought not as a profession

to be held to account for such cases, and I want to emphasize the point that there are a certain number of cases over which the doctor has absolutely no control. There is lurking within the woman's pelvis, and those who practice obstetrics know, an infection that is dormant, that is walled off, but as a result of contraction of the active uterus adhesions are loosened up and infection is set free, and as a result the patient in a few hours develops a rapid septic condition which spreads rapidly through the system and possibly terminates in death. The practitioner did not introduce that infection; he had nothing to do with its introduction, and it was there months before, and he had no control over it at the time.

Arch Dixon, Henderson: I want to say a word or two relative to what Dr. Willmoth has said of the surgeon being more apt to carry infection than the general practitioner. I think of all men in the world the present day surgeon is the safest man in that regard that I know anything about, and I do not believe that any surgeon, who is up-to-date, who has his own ideas about asepsis and the way a case ought to be handled, is more likely to carry infection than the general practitioner. The obstetrical case is a surgical case from the beginning, in that it requires the same care, the same asepsis, the same particular pains to avoid infection that it does in any surgical case where you open the abdomen and expose the peritoneum. Surgeons do not do obstetrical work, but they are called in to do surgical work in obstetrical cases now and then. Occasionally they are called in to deliver a child; but the surgeon is not at fault if he is up-to-date and knows his business. He does not infect any woman, but sometimes there are conditions which do infect women, and there are conditions over which the surgeon has no control nor has the physician in attendance even though he is a careful man. The conditions are so many about the home. There is the carelessness of the nurse that we have to contend with, and I say that with a great deal of caution because real nurses are careful nowadays, but now and then we have a case of infection that is due to carelessness. I have had two in which, I am sure, infection had taken place—and that has been some years ago—through the mother of the woman who had been delivered in using a syringe and local applications, after delivery. But I was sorry to hear Dr. Anderson say what he did about the surgeon. The man who uses sterilized gloves, as Dr. Reddick says, and a sterilized gown, and who knows his business, will not infect any woman, I do not care what the conditions are, whether prenatal, or whether the husband had an old urethritis or possibly a latent gonococcus infection with which he has infected his wife to a certain extent. The surgeon is not going to do anything that will bring about infection in any case of obstetrical work.

There is one point I did not hear mentioned, although it may have been, and that is in the use of the forceps we may by compression produce what is called a birth injury. In other words, you get a small hemorrhage in the brain, and the child when born has convulsions and usually dies. Some of these children after birth have one or two convulsions, they recover from them, and there is a condition of spastic paralysis in one hand or one leg or one whole side. I have had two such cases: both of them breech presentations in which I used forceps applied to the after-coming head. In both instances I am satisfied there was pressure made which produced a small hemorrhage in the brain, and that the hemorrhage was due to the application of the forceps. Therefore, I have been very careful about forceps applied to the after-coming head since. In fact I have not used forceps in such cases since that time, but have used a different method in delivering the after-coming head. I do not know whether that point was touched or on not, but it is a very important one. There is one great danger in using forceps where there is much compression used, and where there is much pulling, namely, you produce a slight hemorrhage of the brain, and you have as a result a child that is practically paralyzed, and possibly may grow up to be almost an imbecile, and it is really much better if the condition is recognized at once, that these children when born should die rather than try to save them. This is a point in the use of the forceps I have found by sad experience. It is a lasting source of sorrow both to the mother and to the father, and it may make the doctor himself feel badly afterward that he possibly did something to produce this hemorrhage of the brain, which might have been avoided. It is well to remember that injuries to the meninges, the central and peripheral nervous systems, are of the greatest importance in the future life history of the child. Traumatism to the soft parts and fractures of the bones are not infrequent during forcep delivery. Some obstetrical injuries are amenable to treatment while others are impossible of repair. It is, therefore, important to recognize the possibilities of hemorrhage in the new-born from the use of forceps, as about 70 per cent of spastic paralysis are due to intracranial hemorrhage. The condition of spastic paralysis following birth-injuries may appear before, during, or after birth and the deformities produced by it are usually flexor in type. Later Jacksonian epilepsy may intervene. As a rule, as these children grow older their mentality is noticeably impaired and they often become imbeciles or idiots.

Bleeding generally results from rupture of a tributary vein of the longitudinal sinus from the application of forceps to the child's head, or from other rough handling. The hemorrhage may be cortical or subcortical. In cortical hemorrhage the damage to brain tissue is due to pres-

sure, in subeortical bleeding there is direct injury to brain substance, motor symptoms which follow depend upon the area of brain impaired as do also impairment of mental integrity.

Louis Frank, Louisville: I rise simply to draw attention to one or two points which have been brought out and which I think it is well again to emphasize. Like some of the gentlemen who have preceded me, I did not hear these papers, but I have heard most of the discussion on them. I certainly think Dr. Anderson is entirely mistaken, and I am impelled to make this remark after the remarks of my friend Dr. Dixon and Dr. Reddick. In fact, we know Dr. Anderson is mistaken. But it is a nice thing to get up and make these sort of talks. There is no bettling the work of the general practitioner; I take it, by the remark that is conveyed referring to the surgical side of obstetrics, and I believe and maintain that the sooner general practitioners look upon obstetrics as a surgical operation, as a surgical procedure so-called, the sooner will we eliminate cases of puerperal infection. We know that our women are not living under the conditions and under the modes of life that prevailed many years ago. The conditions of to-day are different. North American Indian women would step behind a tree, have a baby, and continue on the march, not so modern woman.

One other point. I wish to take issue with the gentleman who believes that most all cases of puerperal infection are due to or dependent upon the gonococcus. It is useless to attempt to seek refuge in such a cause. I do not understand the pathology that permits as a result of impregnation the development of a uterus with adhesions, for nine months and then all at once breaks down those adhesions as the uterus empties itself and produces disastrous results. This does occasionally happen, but it is so exceedingly rare we may disregard it. We know that most women, after they have had an infection of this character, do not become pregnant. All of us can recall a number of such cases occurring in our practice. We must bear in mind the excellent measures which our health board recommends to protect children from gonorrheal ophthalmia. Compare the ophthalmia in number with puerperal fever in the child's mother. I would like to know how many of these women who have children with gonorrheal ophthalmia have puerperal infection. That will answer the argument.

Again, most cases of gonorrheal infection result in one child sterility, and these infections are of such a character that they are rarely discovered, and they are not noted in our subsequent histories, and it is only the fact of our pathological studies and studies in the operating room that make us know that these women have had gonorrhea. The clinical history gave no evidence of it at all.

I would like again to call attention to the fact

that we must not attempt to seek refuge behind the ubiquitous gonococcus.

Looking upon obstetrics as a surgical measure and holding ourselves just as responsible for our obstetrical convalescence as for the result of work in the operating room, preventing meddlesome interference by the neighbors and friends, as Dr. Dixon has pointed out, is the only way to overcome this dread disease. There are cases in surgery, just as in everything else, where there is mortality, an irreducible mortality, because we have not reached the age of perfection and it is human to err.

Lillian H. South, Bowling Green: The question of the prevention of puerperal sepsis was born in a tragedy. If you will remember history Semmelweis was driven insane by the persecution of physicians because he told them that they themselves caused puerperal sepsis in women. Even the church tried to ameliorate the condition by telling women that if they died in childbirth they were immediately transported to Heaven.

Oliver Wendell Holmes, long before Semmelweis brought out his paper, stated that puerperal infection was carried by physicians. He advocated the theory from his observations that sepsis in woman was caused by the doctor or the attendant carrying it from one patient to another. This brought forth such a storm of indignation among the medical profession, that Dr. Holmes was forced to cease writing on this one subject.

Dr. Meigs, of Philadelphia, who was beloved by a great many southern physicians, in the clinic room of the University of Pennsylvania Hospital announced that he would rather believe these women died by the grace of God because they were born in sin than to believe the doctor carried infection in cases of puerperal sepsis. That was the attitude in those days that physicians took.

Delivering women is something every doctor is called upon to do at one time or another. It is a surgical operation. It is our duty to humanity to approach the delivery of a woman the same as we would approach a surgical case. You would not allow me to operate with dirty hands and go into your abdomen without gloves. Then why should you go and care for these cases without a proper surgical preparation, Rubber gloves can be purchased for ten cents and can be easily sterilized in every home, and every physician should use them in his maternity cases. The infection may be on the outside of the vagina, and in making an examination you can carry germs inside to the uterus. Every time you examine a woman you subject her to puerperal sepsis unless you use rubber gloves.

J. B. Lukins, (Closing): There was no intention whatever to convey the impression that the surgeon was the proper man to attend cases of obstetrics or even cases of puerperal infection; but I would like to leave the impression that whenever we can consider any case of obstetrics

as important as we do a case of appendicitis, then puerperal infection will almost be a thing of the past. Moreover, there are men in smaller towns, we know, who do surgery; that most of them do obstetrics, and I take it, every one of those men in this State use sterilized rubber gloves at operations, and that when they get through with an operation they leave the gloves at the hospital, and use another pair of gloves for obstetrical cases, and that physician stands less chance of infecting a woman he attends better than any doctor I know.

We recognize the existence of endogenous infection. We know we do, either the doctor or the nurse, carry infection to the great majority of cases, but there may be a focus of infection in the appendix, the gall-bladder, or tube, but this is so rare that it may almost be disregarded, and in fact, cases of gonorrheal infection nearly all get well or are operated on later. They do not die from gonorrheal infection. It is the streptococcus infection from which patients die.

There is one point that has not been mentioned, and we are all coming to it gradually, and that is more and more cases of obstetrics are going to the infirmaries. The prediction is made by one of the most eminent obstetrical authorities that within the next decade every woman will be delivered in some sort of infirmary. When we have these infirmaries in every county, these women will be delivered in a proper asptic way.

Experimental Observations on the Pathogenesis of Gallbladder Infections in Typhoid, Cholera, and Dysentery.—Nienols (Journal of Experimental Medicine, November, 1916) shows by his experiments upon rabbits that the production of gall-bladder lesions in typhoid by descending infection of the bile from the liver readily occurs. The same mechanism probably holds good in cholera and dysentery. He reports also that the rabbit bile was antiseptic in its action, and as this power appeared to be in direct proportion to its alkalinity it is suggested that alkaline therapy be used in the prevention and cure of chronic carriers.

Examination for Vesical Malignancy.—Malignant vesical growths can often be felt by bimanual examination with the index finger of one hand in the rectum if the patient be a male, or in the vagina of the female and the other hand making firm deep pressure suprapubically. A tumor that can thus be felt is malignant. In advanced cases of vesical malignancy the pelvis and deep inguinal lymph nodes can also be palpated as multiple hard masses. Papillomata cannot be palpated, neither do they cause lymphatic involvement.—E. O. Smith, in The Lancet-Clinic.

LESSONS FROM THE LIFE OF A DOCTOR INCOGNITO.—AN APPEAL TO YOUNG MEN.*

By J. W. CRENSHAW, Cadiz.

I never stand in the presence of young men to deliver a message, that I do not regret that I haven't the Aladdin Lamp, which needed only to be rubbed to bring out its latent powers, or the Cap Fortunatus, which needed only to be put on to have every wish fulfilled. I say I regret, and yet my friends if I were so panoplied I might be armed with that which might prove to be a great misfortune to the young men who do me the honor to listen to this message to-day. The "open sesame" which unlocks without effort has been the undoing of many young ambitions. There would be little to live for if each of us possessed the "wizard wand." God has ordained, and experience has confirmed the time honored platitude that, "there is no excellency without labor." What a man obtains by unflinching resolution and dogged perseverance, no human power can rob him of. The man whom the world is seeking to-day is he who "can do the undoable," and "accomplish the impossible." To write the word "victory" over this terse demand requires the linking of the human and the Divine. The record stands as the world's verdict, as well as the fiat of the "Omnipotent" that, "he who asks shall receive, and he who seeks shall find, and to him who knocks it shall be opened" if he will only take no denial.

I now turn gentlemen, from these generalities to a more specific message, recognizing that what we call success is undefined and undefinable, and yet may be illustrated to a reasonable degree of satisfaction by concrete examples from actual experience.

The following facts are historically correct, and are taken from the life work of a busy Kentucky doctor, who for reasons unnecessary to mention, desires to remain incognito. The doctor is not willing to be classed among the old men, but recently while in a garrulous mood admitted to me, that there is much in the contention of the psychologist, that one of the first evidences of the approach to the decline of the hill of past meridian, is the disposition to give advice to the young. Admitting the force of the claim, he begged me in charity, to list him as the exception to the rule, pledging me, that if his days shall be lengthened until he is far down the declivity, that he will accept the inevitable if not with pleasure, with complacent equanimity.

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THE DOCTOR'S STORY.

Entering a Kentucky village at a date unnecessary to mention, the doctor did not occupy much of his time with the "unpacking" as he had little else besides the clothes he wore. He was, however, so fortunate as to have among his first patients the wealthiest citizen of the town. The old gentleman was suffering from stone in the bladder, and had been examined by a great surgeon from a far-away city, who had declined to operate on account of the danger of administering an anesthetic, the patient suffering from a pronounced heart lesion. Having thus been left to nature for the termination, and this being before the days when a "trained nurse could be had by a whisper over the long-distance," the young doctor was given a room in the home and became the rich man's nurse, at such times as when not professionally engaged. It is needless to add, that the doctor was much with his patient.

The old gentleman was of quiet temperament, and deliberate of speech, possessing in a preeminent degree what is wont to be called, "The dignity of accuracy." It was about the second night of the doctor's vigil, having supported the patient through one of the intense paroxysms of pain, when settling himself back into his invalid chair, he opened the conversation by saying, "Young man, I understand that you have come here to practice medicine." "That is my purpose," was the modest reply. Said the old gentleman, "I just want to give you one piece of advice, you keep your shop, and your shop will keep you." With this volunteered suggestion, after a moment of quiet, the patient drifted off into dreamland under the influence of the opiate administered, leaving the young doctor to ponder in solitude what the advice might mean to him.

The old man passed away a few months later, little realizing what a rich legacy he had left the untutored doctor in emphasizing the brief time-honored, but now golden sentence. The doctor did not frame it and hang it in his office, as it so richly deserved, but I am here to-day to recount to you some of the sweet memories woven around the sick-room incident, and to tell you in joyful sadness, some of its far-reaching influences upon the life and fortunes of the young Kentucky doctor.

The morning after the incident related, and which was to play so important a part in the doctor's life, he stepped into an humble office, with uncarpeted floor, a five dollar bedstead, with its domestic sheets, and half cotton blankets, a fourth-dozen split-bottom chairs and a pair of doctor's saddle-bags completing the equipment, excepting a small pine-top

writing table. "Poor indeed," do I hear you say? You are badly mistaken. The doctor was richer than any king who ever sat upon a throne. You ask me "why," I answer, "The rich man had given him a purpose and a working motto that was to last through time, and on into eternity.

When he would leave his humble office each morning for the nearby boarding-house, the advice of the rich man kept ringing in his ears, "You keep your shop, and your shop will keep you." As the frugal meal was finished the remembrance of the advice would spur him to a hurried return to his office, there to wait, and wait for the patients that were slow in coming. When the rich man had given the advice on that quiet night, he later added a sentence, which if possible, made a deeper impression on the doctor, than the one already quoted. It was this, "Few lawyers and doctors stay in their offices." He then added, "I have never known one to fail who did." Under this timely advice the doctor began keeping regular office hours, and they lasted from sun-rise to sun-set, unless professionally engaged.

Speaking of these influences, the doctor said, "There have been many and various combinations that have helped me to a certain degree of success, in the profession of my choice, but I feel sure that I owe more to the advice given on that quiet night, in that chamber of suffering, than to all other suggestions and advice combined. It came at the psychological moment, at the dawn of my professional career. Having been in hundreds of consultations with my professional brethren, the wisdom of the advice of the rich man has grown with my growth and increased with my years." Said the doctor, "I do not think that I would endanger my reputation as a prophet, if I should say, that I can associate with any doctor for two consecutive hours and then tell you with accuracy whether he is a street-corner doctor, or one who keeps his office." Said he, "I feel sure that I can go into any community, a complete stranger, and thus classify the doctors after a brief acquaintance, without asking any suggestions or assistance." The following incidents will serve to further illustrate the points we are endeavoring to make. After considering the advice of the wealthy patient, and determining to make it a part of his professional life, the doctor formed the acquaintance of a lawyer who had an office nearby. This man had reached middle life and was standing at the head of the local bar, his reputation had gone beyond the county borders and his services were in demand in neighboring sections. The doctor observed that at a stated minute every morning that the key was turned in the lock of that office and the door swung open

for the day's business. He further noticed that as the hands of the clock pointed to the hour of 12 the key was as promptly turned, and he was off to the mid-day meal. Promptly at 1 P. M. the door was again thrown open, just as the sun would sink below the western hills the door could be heard to clang and he was off to his home fireside. The movements of this methodical lawyer were of such precision that the boys of the town used to set their time pieces by his going and coming. Think you not that there was power in the example of this distinguished lawyer to encourage a young doctor in poverty, but ambitious, and longing, yea, even itching for success?

The two men whose portraits we have endeavored to paint, the one, with his advice in the stillness of the night, and the other by his daily impressive example, have gone the way of all the earth ignorant doubtless, that they had influenced the life of a struggling young doctor for good or bad. But their memories are enshrined and the lessons of their lives are now transmitted to others. In closing this department of my paper, I give a brief summing up. If a young man stays in his office he will likely handle books; to gain the knowledge which the handling of books brings, is the first requisite to the detection of disease; to know disease is the essential to correct treatment.

Will you kindly indulge me while I endeavor to give the doctor's answer to one of the most important questions ever propounded and answered.

WHAT OF THE BOOKS MOST HELPFUL.

Before giving an answer to the question asked, we ask the privilege to observe, "That the most important essential in the making of a physician is character. First make the man, and then the doctor."

Very early in the professional life of the doctor, there were two books that lay on the very top of all other books on "the pine-top table." Other books were read, but these were studied, but these two did more for him than all others combined. It is unnecessary to call the name of the first, for you have probably already anticipated me. If you want history, this book leads them all. If poetry is desired, there is none equal to be found. If biography, it contains the model for all ages. *It is the Book of Books.*

You may be curious to know the second? It may cause some surprise when I call the title-page. The doctor did not appreciate it then as he does now, after having read, and re-read it over and over again. I can truly say, said the doctor, that after a near half-century of reading the best of books, from the world's best authors, that Ian Maclaren's

"Beside the Bonnie-Briar Bush" has done more for me than any other book beside the Bible.

Will you kindly bear with me, while we point out some of the strong points of this masterpiece of literature? There is no finer portraiture of high class Christian womanhood and motherhood, in all literature, than is portrayed in the character of Marget Howe as outlined by the graphic consecrated pen of Dr. John Watson under the non-de-plume of Ian Maclaren. No finer picture was ever drawn, or one that has stamped itself more indelibly upon human thought than that of Weelum Maclure, the "doctor of the old school." If an ideal picture of a school teacher is wanted, where would you look to find a better than that of Patrick Jaimeson, the "Loved Domsie?"

The doctor now standing near the middle of the third quarter of the time allotted to life's activities, in the greatest of all professions, and looking back over the road traveled, the two men, the rich man with his quiet advice, and the punctilious lawyer with his never-to-be-forgotten example; the two books, the Bible, and "Beside the Bonnie Briar Bush," have had an overpowering influence overshadowing all else. He puts nothing on a par with their influence except as the "cap-stone" to the pinnacle of whatever success has come in his business or professional life, he places the ever present and ever helpful influence of the happy mother of eight children, who was the wise counselor, and the constant comforter of the sun-shiniest home that the most exacting optimist could conceive of or demand, the power of which will be felt on down the ages and through the cycles of eternity.

I know no more fitting way to close this paper than to give you a photograph of the doctor of the old school as drawn by the doctor's choice author, as typical of many a country doctor whose praises have never been sung in prose or poetry, and whose self-sacrificing acts will never be known except in the land where just men are made perfect.

"The old doctor who made his diagnosis from horse-back on sight, and stated the result with that admirable clearness which endeared him to Drumtochty. His house was little more than a cottage, stood on the roadside among the pines toward the head of the Glen. From this base of operations he dominated the wild glen that broke the walls of the Grampians above Drumtochty. He did his best for every need of every man, woman and child, in this wild straggling district, year in and year out, in the snow, and in the heat, in the dark, and in the light, without rest, and without holiday, for forty years. He did not ride beautifully, for he broke

every canon of the art, flying with his arms, stooping until he seemed to be speaking into Jess' ear, and rising in his saddle beyond all necessity. But he could ride further, stay in the saddle longer, and had a firmer grip with his knees, than any man I ever met, and all for merely's sake. Before and behind his saddle were strapped the instruments and medicines the doctor might need, for he never knew what was before him. There was no specialist in Drumtochty. He was chest doctor, and doctor for every other organ as well; he was accoucheur and surgeon; he was consultant and aurist; he was dentist, and chloroformist, besides being chemist and druggist. How it would delight me, to follow with other and more impressive incidents from this 'the doctor of the old school.' There is no finer piece of word-painting in any language, than the account of the ebbing slowly away of the life of Annie Mitchell, and the trip for, and the arrival of the Queen's surgeon in consultation and the saving of Annie's life.

The closing of a life is only an incident, and it really means little, where or when this may transpire, and yet it is pleasant to contemplate the change coming to one in the quiet of the home bed-room. Such was the fortune, of "the doctor of the old school." His friend Drumsheugh knelt at the bed-side and offered up this prayer. There will come a time when each of you will need just such, and may I express the hope, that every one of you may have such consolation, when the last ride shall have been taken; when the last pulse shall have been counted, when the last summons shall have come:

AND THIS IS THE PRAYER:

"Almighty God, don't be hard on Weelum Maclure, for he's no been hard with any body in Drumtochty. Be kind to him, as he's been to us all, for forty year. We're all sinners afore Thee. Forgive him what he's done wrong, and don't count it up to him. Mind the folks he's helped—the women and the bairnies—and give him a welcome home, for he's sore needin' it after all his work. Amen."

The gray morning light found Drumsheugh still holding to his friend's cold hand, and staring at a hearth where the fire had died down into white ashes; but the peace of the doctor's face was of one who rested from his labors.

Tumors of the testis not infrequently are accompanied by a collection of fluid in the tunica vaginalis. In such a case it would, of course, be a great mistake to regard the condition as a hydrocele only.

THE SIGNIFICANCE OF ABDOMINAL PAIN IN CHILDREN.*

By JOHN D. TRAWICK, Louisville.

Pain is a predominating symptom in about 90 per cent. of all illnesses. Certainly in the illnesses of childhood we find pain in the majority of instances to be the chief reason for our seeing the patient. So universal is the symptom that we are in danger of becoming too accustomed to its presence. Our methods have become so stereotyped that precision and observation have become perverted. Our methods of investigating the cause of abdominal pain, according to Cabot, are rough and primitive compared to the methods used in diagnosis of diseases of the chest. "Aside from information obtained by study of the urine, the blood, the gastric and intestinal contents and occasionally the X-ray, practically all our knowledge depends upon palpation and a good history of the case." In the light of recent investigations into the cause and expression of abdominal pain we are having to readjust some of our former conceptions. We mechanically accept the statement of the mother that the baby has the colic. The suggestion now automatically calls up the mental image of intestinal cramp, whatever that may mean, and we ask ourselves, "What is colic?" "Whence its origin?" "The reason for its existence?" In the same way we find ourselves confronted with the necessity of a new attitude toward pain on the surface of abdomen, or within the abdominal cavity, or in relation to the peritoneum and associated with the abdominal viscera.

We shall not attempt to take up an encyclopedic list of the diseases in which pain is a prominent symptom in the abdomen, but shall confine ourselves to observations more or less general upon some of the most prominent factors. In order to crystallize the discussion the following classification is quoted from Behan's work on "Pain," page 309.

First. Pain above the umbilicus: Lesions of small intestine. Strangulation volvulus intussusception, pancreatic, liver, gall bladder or duct disease, stomach diseases.

Second. Pain below the umbilicus: Colonic diseases of impaction, cancer, rectal diseases, intussusception.

Third. Around the umbilicus: Appendicitis, ileum.

Fourth. Pain over the entire abdomen: Peritonitis, rheumatism, or neuralgia of the abdominal wall, intestinal perforations, tympanities, pneumonia, enteroptosis.

A difficulty presents itself at the outset in attempting to translate pain in infants. In

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the very young practically all of the pain that the child suffers is in the abdomen. Joint lesion, skin affections and diseases of the head and chest bear their own insignia but in the abdomen we are confronted with a rather chaotic situation. Stimuli from whatever cause may produce discomfort in the infant's abdominal cavity and because of the undeveloped state of the sympathetic nervous system, to be referred to later, we find these stimuli reaching the brain and being interpreted by the cry of pain when there may be no real pain. Hunger and fear, primitive traits which the infant being normally endowed are capable of producing both pain and rigidity of the abdominal muscles by a process which will be obvious in the further discussion of our subject. As Thompson has expressed it, "the nerve elements and cellular structures whereby nerve sensations and stimuli are carried are immature in the infant. The nerve lines so to speak are not yet insulated hence sensations are apt to flit about more or less at random and no clear definition can be given. Hence, it has been said that in infants, pain is almost a negligible quantity in diagnosis in abdominal diseases. The subject can not be thus easily dismissed, however, and the reasons will become clearer as we go forward in this discussion.

As the child grows and the different nervous systems acquire maturity there is a more definite plan to the symptoms. Intestinal colic for instance becomes a distinct thing, when we recall that the normal relations of the intestines are those of contraction and relaxation. Meltzer pointed out a law of "contrary innervation," which permits the wave of contraction and alternate relaxation in the intestinal muscularis. These processes are automatically opposite in character and any interference with the perfect rhythm or timing of stimuli must result in an interference with the law. If a strong peristaltic wave starts in any part of the canal the part immediately below should normally relax. If it is unable to do so then pain results and persists until contraction relaxes. The irritant may be gas, though it is conceivable from this theory that there could be infant colic produced by other irritants than the much maligned "wind."

Consider a moment spastic (inorganic) stenosis of the pylorus in infants. At some time in the process of the case there is undoubtedly an irritant stimulus causing a contraction without the subsequent relaxation. The indication for the use of anti-spasmodic remedies, bromides, belladonna, etc., would not otherwise be rational.

Within the past few years there has been a great deal of discussion by two different schools of the question of the sensibility of the

abdominal viscera. One school insists that the abdominal viscera themselves are incapable of producing pain. The other argues that they are capable. MacKenzie says, "In the normal process of life a succession of stimuli is continually passing from the viscera by the afferent (autonomic) nerves to the spinal cord and reacting upon the nerves supplying the muscles, blood vessels and other structures, (cerebro-spinal). These processes are so conducted that they normally give rise to no appreciable sensation." Food taken into the stomach for instance, acts as a stimulus which travels along the afferent nerves to the cord, thence to the brain and an increased flow of saliva as well as of gastric juices results, without appreciable sensations however. Continues MacKenzie, "On account of a morbid process in any viscus an increased stimulus passes by the afferent nerves to the spinal cord. This stimulus may be of a kind that affects neighboring nerve cells in the spinal cord segment. These nerve cells react according to their functions, a sensory cell by producing pain, motor cell by contraction of certain muscles, secretory nerve by increased flow of its peculiar secretions, etc. When such stimulation affects a sensory nerve pain arises which is referred to the peripheral distribution of such nerve stimulated." This argument is of the greatest value in considering our subject, for by keeping in mind the anatomy of the distribution of the nervous supply to the abdominal viscera we may hereafter be better able to locate the diseased viscera by a process of reasoning backward. (Behan). 1. "Outline first, the painful area as nearly as possible and orient it with the cord segment then, (2), find out what organs are supplied by this segment; (3) examine organs for disease and see if by manipulation pain can be produced or increased. As irritation of the viscera causes pain to be referred to the peripheral areas, it has been found that stimulation of these areas also is referred back and causes reflex changes in the viscera." Is there not here a rational explanation of the relief to be had sometimes to a painful abdomen by means of hot applications, mustard, turpentine stupes, etc. The peripheral irritation is relieved by the counterirritant, with the result that the organ affected is relieved by the reflex action.

The referred pains of the abdominal region require careful study and attention is called to the studies of Head on the various "zones." Let us consider briefly Pott's disease in the light of the newer views of referred pain. We are prepared to appreciate what Frazier believes to be of much more importance, viz., the referred rather than the local pain in the vertebrae. In the early stages of tubercular diseases of the spine there may be no external

evidence in the spine of the disease destruction that is going on. There comes a time, however, when as a result of infiltration, and destruction of bone actual pressure is produced on the nerve roots in the region. Pain is felt at the point of distribution of the terminal fibres no matter how remote from the site of pressure. For instance, in cervical tubercular disease the pain may be referred to the occiput or arm. In dorsal disease to the sternal and intercostal regions giving rise to obscure neuralgias. In the dorso-lumbar regions the pain will be referred to the epigastrium, the so-called "belt pain."

When it is recalled that in 1000 cases reported in New York, 70.9 per cent. of tubercular diseases of the spine were in the dorsal region and 22.5 per cent. in the lumbar region with a preponderance encroaching upon the dorso-lumbar, it can be seen how necessary it is to give stricter thought to this matter. In the language of Orr "In all obscure pains in the abdomen of children turn the child over after you have completed your examination of the abdomen." Referred pain is the most common source of error in diagnosing Pott's indigestion, worms, colic, rheumatism of the abdominal wall, may have made a bold stand for the honors of recognition the cause of pain in many a baby's abdomen while the fatal days were going by, but the fine opportunity was being lost for the best treatment of the tubercular disease going on insidiously all the while.

Peritonitis has been diagnosed and operations done for suspected appendicitis when in reality the pain was referred from the pleura inflamed in the beginning stages of a right sided pneumonia. It is probable that every one of you can recall cases to substantiate this.

McKenzie declares that the peritoneum has no nerve supply capable of producing painful sensations. Nor for that matter, says he "have any of the serous coverings except the tunica vaginalis." It is difficult to believe that the visceral layer of the peritoneum is entirely devoid of sensibility and we are disposed to take a mid-course rather than accept the extreme views of MacKenzie in this regard. He argues that the pain-bearing areas are not in the peritoneum but located in the pre-peritoneal area. This area is richly supplied by terminal fibres of sensory nerves from the cerebro-spinal system, which likewise supply the muscles of the abdominal wall. If this be true, then the relationship between muscular rigidity and inflammation of the peritoneum is more readily understood than heretofore. On the other hand, referring again to the visceral layer of the peritoneum, it seems that much depends upon the type of stimulus as to whether or not this

layer is capable of pain sensations. In the absence of peritonitis muscular rigidity is apt to give way to general deep pressure without pain, but if there is peritonitis in regions remote from the parietal wall, as for instance, about a chronic recurrent appendicitis, pain on deep pressure is strongly significant, likewise. We have all seen cases of peritonitis following appendicitis where there seems to be no pain except on deep pressure. Pain is the diagnosis in these cases. A difference can be noted between hyperalgesia of the skin and the deep pains of the inflamed peritoneum. Finney has noted the fact that when the initial pain is referred to any region below the umbilicus it has its origin more frequently in some other structure than an inflamed appendix. But the pain of appendiceal origin is almost always referred to the umbilicus or epigastrium. This suggests the observation that pain that exists in the abdominal wall, more or less generally distributed but frequently localized may sometimes be caused by rheumatism of the abdominal muscles. Some London observers claim that there does exist such a condition in which there is more or less muscular spasm with hyperalgesia associated. Neuritis in the abdominal wall following typhoid fever is not an uncommon thing in children.

It is well to remember in case these last mentioned conditions be suspected that in examining the abdominal wall, painful muscles are best demonstrated by carefully pinching up the muscle between thumb and fingers. The tension produced upon the abdomen by the attempt to grasp the muscle will elicit pain in an inflamed peritoneum even before the muscle is grasped, but if the child is not frightened by the examiner it is possible to clearly define the muscle wall rather than in deeper structures. There are a few functional disturbances of the intestines causing pain which require even further investigation. Toxemia undoubtedly is a potent factor in the stomach aches of children not yet clearly understood. The enteric pains of purpura are probably of toxic origin, and it is well known that sepsis about the tonsils acts not only to produce an intoxication of the blood, but intestinal disturbance as well. The toxins undoubtedly exert an irritant influence upon the terminal fibres of the sympathetic which in turn arouse motor and sensory activity in the intestine.

We must refer you to Behan's splendid work on "Pain," for a full discussion of the subject of intestinal colic.

In order to appreciate the true significance of pain in the abdomen in children it is unnecessary to understand the dual nervous supply to the abdominal viscera. They are controlled by the sympathetic or autonomic

nervous system as well as by branches from the cerebro-spinal nerves.

"In the production of abdominal pain the afferent nerves of the autonomic system act by stimulating the cerebro-spinal nerves in the cord. Such stimuli are received by the cerebro-spinal system and expressed at the peripheral termination of whatever spinal nerves in the cord. Such stimuli are received by the cerebro-spinal system and expressed at the peripheral termination of whatever spinal nerves may be involved in terms of pain, hyperalgesia, or muscular contraction in the external abdominal wall." (MacKenzie.) There is a division of opinion on the question of the pain producing qualities of the abdominal viscera, but whatever school may argue the point, it seems to be agreed that there is a transference of stimuli and a resultant pain expressed at a point remote from the organ.

Hence the necessity for a more careful differentiation of pain. Its nature must be studied, its localization attempted, and the localization if possible of the organ producing the pain.

The difficulties of diagnosis are increased in children by several factors (1) by the immaturity of development of the reflexes and by lack of insulation of the nerve trunks; (2) by the inexperience of the child organism in interpreting the various stimuli that may reach the central nervous system.

Finally if it be true that early surgery might have saved many a child suffering from supposed colic or "enteralgia" had there been a more deliberate search of the viscera in the light of the more advanced ideas of cause and effect, it may be just as true that many an unnecessary operation could have been postponed or not done at all, had a closer and more intelligent differentiation been attempted of abdominal pain in children.

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Nitrous Oxid Analgesia and Anesthesia in Obstetrics.—Elmer L. Henderson, (American Journal of Surgery, November, 1916) states that in nitrous oxide gas we have a safe and efficient analgesic which is worthy of general adoption in obstetrical practice, and one which clearly refuted the Biblical proclamation that "in sorrow thou shalt bring forth children," although the credit for painless labor has hitherto been claimed by Gauss and his Dammereschlaf.

SOME OF THE DUTIES WE OWE TO OUR COUNTY SOCIETY.*

By W. R. BURR, Auburn.

In asking me to have something to say on this subject, no doubt our worthy acting secretary was actuated by the impression that I may not have been, at least during recent months, as thoroughly alive to the duties I owe our county society as I should have been and that I, as well as one of the other members of this body, should be stirred up over the matter and stimulated to the point of bringing forth fruit meet for repentance.

I like to make the quotation from Shakespeare, which is one of the truest of his many wise sayings, that, "It were easier to tell twenty what it were best to be done than to be one of the twenty to follow your own teaching." How easy it is to point out to the other fellow his duty in any respect, and how hard it is to keep in the right course yourself.

But while I may have been derelict in my duties toward my county society, to a reprehensible degree, there are others who deserve well intended criticism for their lukewarmness and negligence in that respect.

While the Fates have seemed against me, and I have been unable to attend many of our meetings during the past year, I am sure that I am not taking too much credit to myself when I make the assertion that I have had fewer absent marks registered against me since the society was organized than any other member on its roster, with the exception of the gentlemen who have served us as secretary.

Some of the members of this society who live in Russellville, have always been conspicuous for their absence from its meetings, and have seemed to ignore it and regard it as too small an affair to claim any of their valuable time. It seems not to be on a plane with the lofty eminence they arrogate to themselves professionally. At times I cannot discard the impression that they would not condescend to keep their names on our roster if the county society were not a stepping stone to more pretentious society affiliations; and for the further fact that insurance companies do not accept for examiners physicians who can not show that they belong to their county and state medical societies.

It may be, however, that these brothers against whom I am bringing this indictment can plead extenuating circumstances; that they may be so constantly busy battling against disease and death that they are actually unable to spare an hour or two once a month from the conflict to attend the meetings of their county society.

*Read before the Logan County Medical Society.

Some of us, though, are not altogether blameless of the imputation of "four-flush-ing;" are not always quite as busy as we would have it appear that we are. Some of us can make more ado over a sealawag patient or two than the proverbial old hen with her one chicken. There are more ways than one to advertise.

And some of our members who live in the other towns of the county, have been notoriously lacking in interest and enthusiasm concerning our county society. Why some of them actually come to Russellville, county court day after county court day, and rarely ever put in their appearance at a society meeting.

It may be that they have so much other business to look after that they can't make connection with their society meetings; but I have a conviction that they could claim attendance, if they tried. If they looked at the matter in the right light, they would consider it a business duty to be present at every meeting of their society they could possibly attend. They are, or should be, pursuing their calling for all the possible good they can get out of it, both for themselves and for those who look to them for professional services, and they should arrange their other affairs so as not to neglect their society duties.

I am at a loss to understand the indifference the average doctor shows toward his local medical society. It seems to me that every doctor should strive to keep grouched out of his system, and be glad of an opportunity to meet, and rub elbows, socially and mentally, with his neighbor doctors, occasionally. They can help him with their counsel, if his "think tank" is not already overflowing with professional knowledge, and I am sure there is none of us who is not bettered by having a society meeting with our professional brethren.

We should be glad of an opportunity, once in a while to get away from the daily grind and exchange ideas on medical and other topics with our brother doctors. There is no sort of question about our being benefitted by these comings together; they broaden our view-point and make us better men and better doctors.

"No man liveth to himself and no man dieth to himself," if we are to take the Bible for what it says; and none of us can approach what he should attain, professionally, if he holds himself aloof from his professional brethren, and takes no interest in the medical meetings that are held in his locality.

Whatever the high-brow medicine man may think of the matter, if he would only come down from his stilts and get rid of the notion that he knows the last word in medicine and surgery, he might be a trifle benefitted by at-

tending his county medical society and getting the common sense views of some of the able and experienced good old country doctors who may chance to be in attendance.

And if we would only keep track of the programs for our meetings, and study our text-books and books of research on the subjects that may be set apart for discussion, we would find at the end of each year that we had gathered considerable information that could be classed as worth while.

Besides the laity is beginning to "sit up and take notice," and though we may not think it, a large per cent. of our clientele keeps tab on us and knows whether or not we are studious and take an interest in the onward march of our profession. The time has arrived when our friends and neighbors know whether we are in earnest and truly in love with our profession, or only half-heartedly devoted to it.

To keep their confidence and esteem, we should be enthusiastic medical society attendants; this much we owe to ourselves, as well as to those whom we essay to serve and whose money we expect for our services.

Not only should we attend every meeting of our county medical society that we possibly can, but we should contribute to the best of our ability toward making these meetings successful. Every time we are placed on duty, we should do our level best to perform it acceptably. We may feel that some other member could perform the duty better, but that should not keep us from making the very best effort of which we are capable. And each duty met as best one can, makes the next task easier of accomplishment and more praiseworthy when finished.

I know it is no easy matter to keep a county medical society up to the desired standard; but it can be done.

If you and I will make a firm and steadfast resolution that from this good time on we will attend our society meetings each month unless providentially hindered, regardless of the probability that we may miss an insignificant fee or two, and that we will do our duty to the society in every respect, we can make it flourish and will be amply repaid for the time we may devote to it.

But there is something I was about to forget, namely, to "touch up" our, in most respects, very worthy secretary, although I trust I may not be charged with taking advantage of his absence. But as he is "on the border," helping to take care of the health and wounds of Uncle Sam's soldier boys, I shall have to content myself with bitting him in the "substitute."

He has made us an officer against whom we can bring but one charge of neglect of duty; and I think it is due him to state that he is

not by himself among the secretaries of the State and county societies in this dereliction of duty. The duty in which he has fallen short is in never having reported the proceedings of our society to the JOURNAL. I say never: At least I do not remember ever having seen one of his reports in the JOURNAL.

It is supposed that county secretaries shall make such reports, each month, and it seems to me a proper thing to be done. It would take but little of the secretary's time each month to make these reports, and they would make the readers of the JOURNAL think that the secretary who sends in good reports of his society meetings is a "live wire," whether many of his fellow members are or not.

Now what I have said has been uttered in a kindly spirit, and my criticism has been entirely good-natured; in fact I am in the same boat as the rest of you when it comes to needing criticism; and I trust it will have the effect of awakening us to a sense of our duty, and that during the coming year our society will score the most successful period of its existence.

Let our slogan be: Boost the Logan County Medical Society, and make it as good a one as there is in the State.

THE UNACKNOWLEDGED AND UNCAN- CELED DEBT OF OBLIGATION OF THE PUBLIC TO THE MEDIC- AL PROFESSION.*

By GEORGE COWAN, Danville.

At the outset in the treatment of this topic. I believe it will be accepted, at least in medical circles, as an undeniable fact, that the medical profession, under a false and exaggerated sense of obligation or duty, is rendering the public at large too much charity service.

Considering uncollectible bills of patrons who are evidently able to pay either in whole or in part a portion of their dues, and those who are certainly and absolutely unable to pay anything, the total loss to the profession may be estimated conservatively as one-half of the labor of an ordinary lifetime.

It is a fact, recognized by intelligent, truthful laymen, as well as the medical profession, that the practice of medicine has in all ages been regarded and treated as an altruistic or philanthropic calling mainly. The daily life-long contact with scenes of the sick room and its accompaniment of agonizing grief, and mental and bodily suffering, to which must be added the acute and heavy sense of responsibility, the cultured and humane physician feels in ministering to the sufferers,—fully accounts for the enormous amount of free or

charity service by the humane element of the medical profession; and the physician who is not humane, i. e.; human, is a monstrosity. Such a one is divested of the first and most distinguishing characteristics of his kind; the most important and elevated of his nature.

Admirable and creditable as such principles of unselfish conduct are in our calling, it has been productive of baneful and detrimental results to the best interests of the public and the profession alike. Neither one can be a party to the violation of the universal divine law of compensation, "The laborer is worthy of his hire," with impunity.

Inadequate compensation of any commodity or service whatever, which ignores the cost of production and reasonable profits, inevitably makes for and ends in adulteration of the wares and a progressive deterioration of services. In the one case, the public is subjected to inefficient service and unwittingly to the evils of ignorance and malpractice; while on the part of the profession, it undergoes a process of retrograde metamorphosis, degenerating in efficiency in each successive generation, and the legitimate progress of the medical science is retarded *pari passu*.

The first item in the bill of particulars, is in evidence in the service of public dispensaries and hospitals and other eleemosynary institutions under the management of religious and philanthropic societies. In such institutions, the medical and surgical house and visiting staffs receive neither thanks nor pecuniary compensation for their services; while every other employee, from superintendent down to scrubwoman, is paid in full the market value of their services. In the rural districts of the country, owing to the absence of the help of hospital and dispensary service, the burden on the shoulders of the country doctor is much heavier, and the amount of work in the total is increased and made very many times more onerous and inefficient.

Our next item of loss in the account against the public is clearly a self-imposed one, through the operation of the prohibitory restrictions of our code of ethics. This, as you know, declares that it is derogatory to professional character for any of its members to hold a patent for any surgical instrument, surgical apparatus, or medicine whatever. The immense and profitable benefit freely accruing to the public throughout the history of the national practice of medicine, is of inestimable value and the loss to the profession beyond computation in figures.

This history, beginning with the era of the discovery of anaesthesia, asepsis and antisepsis, and extended to the present hour, discloses an amazing and astonishing multiplicity of discoveries in the preventive and curative management of disease, of injuries, and surgical

*Read before the Boyle County Medical Society.

procedures, so various, and diversified as to be beyond comprehension and practical appreciation by any single individual mind, and it is only through the establishment of quite a number of specialists that the benefits of the modern practice of medicine can be made fully available.

These benefits the public, however, uses and enjoys free of cost of any duty or royalty, because of the quiet and dignified pronouncement of the code of ethics, that it is derogatory to professional character for a physician to hold a patent on any surgical instrument or medicine," and such prohibition prevails throughout the civilized world. To estimate the value of the progress which the medical sciences have made during this era; or previous epochs, or to compute the immense value financially to the public and to the world generally, is impossible, because of the complexity and extent of the problem.

The public is by no means ignorant of this progress and the consequent great debt of obligation to the medical profession for it; and yet it is neither willing to acknowledge or put forth any efforts to reduce its debt or cancel it. It is idle to expect it unless the profession takes the initiative to secure it.

And surely there has been grey matter and energy in sufficient amount and quality, allotted by a kind Providence to our medical societies, county, district, state and national, to educate and influence the public in the duty of cancelling its share of this debt; the medical profession contributing as good citizens also its proper share.

The amount of graft and wanton waste on the part of government, municipal, state and Federal, would more than finance the effort.

The amount so saved would furnish out and equip ample general hospitals and dispensaries everywhere, as well as hospitals and camps for the segregation and treatment of tuberculous, as in the management and treatment of leprosy; and have something left for the doctors. At the same time, the moral atmosphere of the Nation would receive a much needed treatment of fumigation and disinfection.

To many, these speculations doubtless appear as idle dreams, and none of us here to-night may live to see such reforms as are here indicated taking place; but they never can take place unless a beginning is somewhere or somehow inaugurated.

Our immediate duty as an association is a very plain one. We have to-night adopted a revised schedule of fees. We must make it as real as possible by use and living up to its requirements. We must begin now as never before, the development of the business side of our calling. First, let each patient understand that medical work must be paid for; second, do as little charity work as possible; third,

be more practical and less altruistic; and to conclude, let us serve notice on whom it may concern, that the parable of the Good Samaritan has been worked overtime on us; the indifference of the public appearing in the role of Priest and Levite.

Diagnosis of Abdominal Distention in Children.

—Louis Fischer (Medical Record, November 25, 1916) remarks that abdominal distention is found in Hirshsprung's disease, in tuberculous peritonitis, in malignant new growths, especially sarcomata involving the kidney, and in cirrhosis of the liver. Enlarged spleen may cause distention, as may rickets, Pott's disease, hydronephrosis, typhoid, and pneumonia. A marked leucopenia of 4000 to 6000 with distended abdomen should be suspected to be of typhoid origin even in the absence of the Widal and diazo reactions. In all cases of abdominal distention a rectal examination is imperative, while suspected pyloric obstruction calls for a bismuth meal and X-ray examination. Colicky pains with tenesmus without expulsion of flatus or stool, but with jelly-like blood tinged evacuations immediately point to intussusception. Great rapidity is characteristic of the course of acute abdominal inflammation in children and great care, therefore, is required in diagnosis with special attention given to the lungs, particularly the lower lobes.

Syphilis with Neurological Symptoms Stimulating Other Conditions.

—D. A. Haller and I. C. Walker (Journal A. M. A., November 18, 1916) emphasize the importance of doing a Wassermann test as a routine measure, and report three cases in which the correct diagnosis would not have been made without its aid. The first was that of a man with an old trifacial neuralgia and some facial palsy; the second was a similar case in a woman, the trigeminal neuralgia not, however, being accompanied with a palsy; the third was a case of what was apparently idiopathic epilepsy. In all three cases the syphilitic nature of the condition was discovered as the result of a routine Wassermann test, and confirmed by cure of the condition in each under antisyphilitic treatment.

Classification of Streptococci.—The classification of streptococci made by Holman is based on the reactions on blood agar and the fermentation or nonfermentation of the carbohydrates, lactose, mannite, salicin, and inulin in serum broth. The first main division is made by the reactions on blood agar into the hemolytic and nonhemolytic forms. These are then redivided into the lactose and nonlactose fermenters. Each group is again divided into the mannit and nonmannit fermenters, and finally into those that ferment salicin and those that do not.

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ASHLAND, 1917

COUNTY SOCIETY REPORTS

Daviess—The Daviess County Medical Society held its annual meeting December 19th, with thirty-seven members present. The President, G. L. Barr, presided.

A communication from the State Secretary in regard to vital statistics was read. The society asks that its members be supplied with blanks so they can frank in their reports.

J. W. Ellis read a memorial on the death of Dr. C. H. Todd.

J. H. Thorpe read a very interesting paper on vaccines and serums, which was generally discussed.

John M. Clayton, of West Louisville, was elected President; O. W. Rash, Vice President; J. J. Rodman, Secretary and Treasurer; C. Deweese, Delegate, vice Dr. Todd; I. J. Hoover, Delegate for three years; I. L. Denton, Censor.

The city physicians had dinner served at the Y. M. C. banquet hall.

J. J. RODMAN, Secretary.

Eagle Valley—The Eagle Valley Medical Society met at Sanders, November 1st, 1916. The meeting was called to order by Dr. Foster. Minutes of preceding meeting read and approved. Dr. C. J. Broeman, of Cincinnati, Ohio, was elected to membership.

George Purdy, of New Liberty, read a paper on "Infantile Paralysis." This was a very interesting paper bringing out some very important thoughts, and one of the most important papers read before the society.

Curran Pope, Morrison and Ricketts discussed this paper.

John Rowan Morrison read a paper on "Syphilis of Heart and Blood Vessels." Dr. Morrison said it is remarkable what pleasing results we get in these cases when properly treated, and a patient can go on living comfortably for some time.

Broeman, Asman and Pope discussed the paper.

Gaylord C. Hall read a paper on "Nasal Accessory and Sinus Diseases." This was a very interesting paper without any ambiguous thoughts or words, showing that the writer has given it quite a great deal of study and time.

Bernard Asman, Brown and Ellis discussed this paper.

C. J. Broeman, of Cincinnati, showed about 200 lantern slides thrown on the screen of "Syphilis and Cancer of the Skin." This was a very fine collection and a treat to all present.

J. B. Foster was elected President, and Dr. Gaines, Secretary.

George Purdy made a motion that the society adjourn to meet in Sanders, the second Wednesday in May. Seconded by Dr. Brown. Motion carried.

ALLEN DONALDSON, Secretary.

Harrison—The Harrison County Medical Society held its annual meeting at Elks Home, December 4, 1916, with nineteen of its twenty-one members present. The society had as its guest President of the State Association, Dr. Milton Board.

Officers for 1917 were chosen as follows: President, R. W. Wood, Connersville; Vice President, Josephus Martin, Cynthiana; Secretary, W. B. Moore; Treasurer B. B. Petty; Delegate to State Meeting, W. B. Moore; Censor, Havland Carr.

Milton Board made a most excellent talk on the danger of prescribing narcotic drugs.

Josephus Martin, Wood, Best, Wells, W. B. Moore and others discussed the paper.

After the meeting the banquet was served in the dining room, where a very pleasant hour was spent.

This year has been a very pleasant and profitable one for the society. While our membership has decreased from former years by deaths and removals, the attendance and enthusiasm increases with each meeting. Everyone was delighted with Dr. Board's visit and sincerely hopes he will come again.

W. B. MOORE, Secretary.

Logan—The regular meeting of Logan County Medical Society was held at the court house in Russellville, December 4th, 1916.

Meeting called to order by the president, J. L. Russell. Members present were Russell, Crittenden, Burr, Gossett, Piper, Alderson and Byrns, Sr., and Haberer.

The Acting Secretary read some communications from A. T. McCormack. Motion made and carried to request "United States Public Health Service to send us the morbidity blanks at an early day.

W. R. Burr requested the President to appoint a committee to draft resolutions upon the death of Dr. A. M. Crittenden. The President appointed Drs. Burr, Gossett and Piper.

W. R. Burr read his paper, "Some Duties We Owe Our County Medical Society." The paper was complimented by all present. Motion to have the paper sent to the Journal for publication was adopted.

Motion to change our By-Laws was made by Dr. Haberer, seconded by Gossett, carried. Due notice to be given to all members.

The next thing on the program being the election of officers, the following persons were elected for the year 1917: President, W. L. Gossett; Vice President, J. R. Crittenden; Secretary-Treasurer, Walter Byrne, Jr.; Censor, W. R. Burr, Delegate, J. L. Russell.

A committee was appointed by the President to draft an annual program for the year 1917. composed of Drs. Piper, Burr and Gossett.

No other business, motion to adjourn carried.

WALTER BYRNE, SR., Secretary.

Letcher—On November 24th, the physicians of Letcher county met for the organization of the Letcher County Medical Society. Dr. Shirley, the Councilor for the Tenth District, was with us. We have fifteen practicing physicians in the county and expect to have every one of them in our society. Dr. J. D. Fitzpatrick was elected President and Dr. B. C. Bach, Secretary and Treasurer. Drs. J. M. Bentley, D. F. Smith, G. D. Johnson, J. D. Fitzpatrick and Bert C. Bach, were present at our initial meeting.

B. C. BACH, Secretary.

Marion—At the regular meeting of the Marion County Medical Society held December 19th, it was unanimously agreed to accept the franked postals for immediate morbidity reports and have been instructed to request the State Board of Health to supply them to the physicians.

I took advantage of the occasion and explained to the members the recent ruling of the State Board in regard to the handling of diphtheria and scarlet fever cases.

The idea of holding a "Health Day" as a have explained to you personally, was approved and certain expenses for this meeting are to be paid by the society.

The following officers were elected for the ensuing year: T. E. Flanagan, President; G. G. Thornton, Vice President; C. B. Kobert, Secretary and Treasurer; J. T. Boldrick, Delegate; C. H. McChord, Alternate; E. Kelley, R. C. McChord and G. G. Thornton, Censors.

We have added one new member to our society, Dr. J. L. Putnam, of Penick, so that now every active physician in the county is a member.

C. B. KOBERT, Secretary.

Todd—The Todd County Medical Society met at Elkton, December 6, 1916. House called to order by Vice President R. L. Boyds. On motion the secretary was instructed to request the State Board of Health to provide every physician in the county of Todd with blanks for morbidity reports for communicable diseases.

This being the regular annual business meeting and election of officers the following names mentioned were duly elected and installed for the ensuing year: B. E. Boone, Elkton, President; R. W. Frey, Trenton, First Vice President; L. P. Trabue, Elkton, Secretary; J. R. Crittenden, Gordonville, Censor; L. P. Trabue, Delegate to State Meeting.

A committee composed of L. P. Trabue and B. E. Boone was appointed to arrange a program for the year 1917.

There being no further business the meeting adjourned to meet the first Wednesday in January, 1917, at Elkton.

L. P. TRABUE, Secretary.

Union—The annual meeting of the Union County Medical Society was held December 10th. We had a very good meeting, ten members being present, as follows: Drs. Ray, Henry, Amerson, Hardister, Sloan, Stewart, Gray, Conway, Allen. We had several good clinics, one with a fractured arm, another an old gentleman seventy-nine years of age with a complication of troubles, heart, kidneys and arteriosclerosis. We had some very interesting discussions.

I think our society has started off better than for several years. We have elected good men to office, that will do their duties. I informed our members that you had requested that our dues be paid in as early as possible, and I think that quite a number will pay at our next meeting, January 6th.

S. L. HENRY, Secretary.

Washington—The Washington County Medical Society has taken on new life in the past few months, and has been having one or two meetings monthly; the greater part of the time has been taken up with the business end of the meetings. We have about completed plans for a uniform schedule of prices. The new schedule calls for quite an increase over the old rate. There is better fellowship among our physicians than has been for several years past.

Our last meeting was held at Mackville on November 30th, when the society was banqueted by Dr. W. R. Thompson and Mrs. Thompson in their usual fine way of doing things.

The following physicians were present: R. C. McChord, Lebanon, our Councilor; W. I. and Omar Hume, Louisville, and A. Y. Hatchett, J. N. Shehan, W. T. Barnette, W. R. Thompson, J. C. Mudd, W. W. Hyatt, R. J. Hamilton and J. H. Hopper, of Washington county.

W. W. Hyatt acted as toastmaster and the following gentlemen responded to toasts: W. T. Barnette, W. I. Hume, J. H. Hopper, R. C. McChord, A. Y. Hatchett and J. N. Shehan.

T. A. Wash of Cornishville, and A. H. Wither-
spoon, of Harrodsburg, who were on program, as also were M. W. Hyatt and W. S. Gabhart of this county, were unable to be present.

The evening was thoroughly enjoyed and was very profitable and Dr and Mrs. Thompson will long be remembered for their hospitality.

J. H. HOPPER, Secretary.

Eclampsia.—Albert T. Griffith (Bulletin of the Department of Public Charities, October, 1916) gives his opinion that early diagnosis on sound principles offers the keynote to success. In the treatment, five points should be borne in mind: 1, Regulate and limit the food of the patient; 2, stimulate all secretory functions; 3, keep the alkalinity of the blood plasma normal; 4, regulate the blood pressure; 5, do not delay the delivery.

NEWS ITEMS AND COMMENTS

While on a professional call the automobile in which Drs. T. L. Bailey and L. P. Moore were driving ran into a stump while near Depoy and Dr. Moore was thrown through the windshield suffering some severe cuts and bruises but was not seriously injured.

The many friends of Dr. W. F. Phillips were distressed to hear of his sudden and serious illness which started with a paralytic stroke while in the Methodist church at worship. The stroke came upon him without warning and he had to be carried from the building and placed in an auto whence he was taken to his home.

At the regular weekly meeting of the city commissioners of Paducah Dr. Frank Boyd's resignation from the city board of health was accepted and Dr. W. H. Parsons was chosen to succeed him. Dr. Boyd's reason for retiring from the position of honor and trust was that his private business demanded all of his attention. The resignation was accepted with regret.

Dr. J. F. Daugherty of Dividing Ridge, Pendleton county, arranged to buy the property of Dr. B. K. Menefee at \$4,200 and will succeed Dr. Menefee in the practice of medicine at Walton, the latter expecting to go to Gardner, Ill., where his daughter, Mrs. John Allison, resides, and make that location his home for the practice of his profession. The contemplated departure of Dr. Menefee is sincerely regretted by a large circle of friends, as he is an excellent physician and a fine gentleman.

Dr. F. A. Taylor is still confined to his apartments in the Somerset Sanitarium, and his condition is worrying his many friends. He has an aggravated attack of rheumatism, which has rendered him practically helpless. Dr. Taylor is possessed of a hopeful disposition and a resolute will, and it is hoped that he will successfully combat the malady. He is the oldest physician in Southern Kentucky, and his practice in the profession has always been large and extensive. Dr. Taylor has always been a very active man, and his continued confinement must be very annoying. We hope, however, that he will soon be on the road to recovery, and will be able to greet his old friends on the streets of the city.

Dr. F. H. Montgomery sustained a very painful injury while hunting. He was in a briar patch when he attempted to land some birds. In some way a blackberry vine struck him in the right eye and a briar penetrated the ball at the extreme right side. He hurried to town in his automobile and had the briar removed. It was with the greatest difficulty that he was able to drive his ma-

chine on account of the severe pain resulting from the injury.

Drs. E. S. Smith and W. E. Rodman have gone to Chicago, Ill., where Dr. Rodman will submit to an operation on his eyes.

Dr. Weirick's Sanitarium, Rockford, Illinois, formerly Dr. Broughton's Sanitarium—established 1901—for the treatment of opium, morphine and other drug addictions, including alcohol and special nervous cases, is one of the best managed institutions in the middle west.

The demand for reputable institutions of this class has increased, and our endorsement of this institution should be sufficient recommendation to physicians who have cases of this kind needing sanitarium treatment. Patients receive good care, humane treatment and enjoy the comforts of a good home.

Dr. A. T. McCormack, secretary of the State Board of Health, and Dr. W. L. Heizer, State Registrar of Vital Statistics, both of Bowling Green, gave an interesting lecture, illustrated by stereopticon views on health and prevention of diseases at the courthouse, November 9th, at Nicholasville. Notwithstanding the inclement evening there was a fair attendance. Dr. T. R. Welch presided and presented Harry McCarty, who introduced Dr. McCormack by saying that it had been his pleasure and privilege to be associated with him in legislative work for many years, and that he knew of no man who had done as much for Kentucky and whose services had been less appreciated. Drs. McCormack and Heizer are touring Kentucky with a view of reducing the sick and death rate of Kentucky and gave some statistics that are alarming. The proposed method is by a better sanitation, and until that can be secured, the use of the proper toxins to kill the germs. Another plan proposed which ought to be of vital interest to every citizen of both town and county was the employment of a county health officer and community nurse. He said that where the fiscal courts and boards of council had failed to respond, the different women's clubs have been keenly alive to the conditions and taken up the work in many towns with wonderful success.

Never was there a completer or more genuine surprise in old New Castle, than when on last November 4, announcement was made that at 10 o'clock a. m., on that day, Mrs. Annie Caplinger Wolfe, one of the most widely known ladies of the town, and one of the best liked, had been joined in holy wedlock with Dr. N. Douglas Abell, of Louisville. The ceremony was performed at the home of the bride's dear friends, Mr. and Mrs. John T. Crabb, near Crestwood, Ky., in Oldham county. Rev. Dr. Henderson, of Louis-

ville, a mutual friend of the parties, being the officiating minister.

Dr. E. R. Montgomery, former City Health Officer in Louisville, died at the home of his daughter, Mrs. Harry Watkins, North Birmingham, Ala., after a serious illness of several weeks. He was over 70 years old.

As City Health Officer Dr. Montgomery served two terms under the administrations of Mayor Charles D. Jacob. Also for many years he was chief medical examiner for the Royal Arcanum Lodge in Kentucky. He held many offices in the lodge, both in the subordinate lodge of Louisville and the Grand Lodge of Kentucky. He practiced medicine for more than forty years in Louisville and Jefferson county.

Dr. W. T. Brooks of Paris, fell down the steps at the Christian church at that place, badly bruising his face and blacking an eye.

The Harrison hospital at Cynthiana may close its doors within the next few weeks. The hospital was organized in 1906 with \$15,000 capital. The stock being subscribed by a number of citizens. The city contributes \$30 per month and the county \$166.67 a month to maintain the institution. Limited finances and the cost of maintenance have kept the financial affairs of the institution in a precarious condition.

Dr. Charles H. Todd, one of the best known physicians in Kentucky, died suddenly of heart disease at his home in Owensboro. Dr. Todd was born in Virginia and during the Civil War was a surgeon with Gen. Robert E. Lee's army of Northern Virginia.

Dr. Todd's wife, who was a grand daughter of Gen. Isaac Shelby, first governor of Kentucky, died several years ago. He is survived by two daughters in Owensboro, and a son, Stuart Todd, an artist, in Cincinnati. Dr. Todd was commander of the Rice E. Graves Camp, United Confederate Veterans. He was also prominent in the Kentucky State Medical Society, and a former president of the organization.

The Muhlenberg County Health and Welfare League is supporting a Trachoma Clinic at Luzerne, Dr. T. L. Bailey, of Madisonville, giving his services free.

These clinics are resulting in much good being accomplished and the public should unhesitatingly avail themselves of this opportunity, as much good can and is being done thereby.

Dr. Henry Trigg was born in Pittselsvania county Virginia, April 3rd, 1830; died November 24, 1916. In 1845 he moved to Kentucky with his parents. He was the fourth child born to his parents of a family of eight, and the last to sur-

vive. In his youth he lived near Henderson. In 1862 he began the practice of medicine at Lusby's Mill, moved from there to New Columbus, where he died at a ripe old age. He was a successful physician and farmer, but for years had been an invalid, though his death was a shock to all.

The Scott County Medical Association elected following officers: President, Dr. A. N. Crain; Vice President, Dr. William Mason; Secretary-Treasurer, Dr. David Knox; Censor, Dr. J. C. Thomason; Referee, Dr. John Pack; Delegate to the State Convention, Dr. Charles Lancaster; Alternate, Dr. Harry Johnson.

The Bourbon County Medical Society held its regular monthly medical meeting in the county court room of the Bourbon County court house, Thursday, November 23, 1916, at 8 p. m.

Dr. Paul Cassidy, Oral Surgeon to the Cincinnati General Hospital, read a paper on "Retrospection, History and Modern Treatment of Pyorrhea and Focal Infection for Prevention and Cure of Rheumatism," etc.

Dental, surgical and medical friends from Lexington, Winchester and Cynthiana were present.

Drs. J. A. Stucky, R. Julian Estill and John McMullen are among the Lexington physicians who attended the annual convention of the Southern Medical Association at Atlanta, Ga.

RESOLUTIONS ADOPTED BY THE OWENSBORO MEDICAL SOCIETY ON THE DEATH OF DR. CHARLES H. TODD.

Whereas, it has pleased our good Lord to take from us our fellow physician and beloved friend, Dr. Charles H. Todd, we bow in humble submission to his will. His life was an incentive to all that was good; he was always cheerful and kind; a hard and conscientious worker, and ready at all times to respond to the call of rich or poor, in whom he knew no difference. Therefore be it

Resolved, That in his death, the Owensboro, Daviess County and Kentucky State Medical Societies have suffered a great loss. He responded to their every call of duty, and had presided over all of them with honor and dignity.

Resolved, That we express our sympathy to his family and his relatives.

Resolved, That these resolutions be spread upon our minute books, and that a copy be sent to his family.

J. J. RODMAN,
C. J. LOCKHART,
E. B. McDERMICK,
Committee.

Owensboro, Ky., Nov. 14, 1916.

THE FORUM

To the Members of the Kentucky State Medical Association:

We need the following numbers of the KENTUCKY MEDICAL JOURNAL to complete our volumes:

Vol. 8, 1910, Nos. 3, 4, 6, 11 and 14.

Vol. 2, 1904, all numbers missing except Nos. 1 and 2.

Vol. 7, 1909, Nos. 1, 5, 7, 8, 12, 14, 16, 21 and 22 missing.

As it is impossible to bind these volumes with these numbers missing, it will be a great favor to the University if they could be supplied.

May we ask the co-operation of the members of the Association?

Library University of Louisville,

Medical Department,
Henry Enos Tuley, Dean.

TO THE EDITOR:

We were pleased indeed to note the article appellated "Detail Men" which appeared in the December 1st issue of the KENTUCKY MEDICAL JOURNAL, and also the reference made to firms that are advertising their wares through the medium of the KENTUCKY MEDICAL JOURNAL's columns. We feel that this kind of mention not only appeals to the advertisers, but also reflects the greatest credit on the editors of this JOURNAL, and we are glad to state that we are advertising in nearly every State Journal in the United States and also the *American Medical Journal*. In addition to this we are putting forth every effort to help the State Associations, both medical and dental at their Conventions, and it is a pleasure to be associated with them.

With the Season's Greetings, we remain,
Very truly yours,

HORLICK'S MALTED MILK COMPANY.

Epidemic Meningitis.—W. T. Connell (Canadian Medical Association Journal, October 1916) says that as soon as the diagnosis has been confirmed by lumbar puncture, treatment with a polyvalent serum should be instituted. As much fluid as will flow away freely should be allowed to drain out through the puncture needle, the amount varying from thirty to sixty c.c. in adults, and then by gravity a smaller amount of the serum should be allowed to flow in, from twenty to thirty c.c. being sufficient for the first treatment. At once five to ten c.c. of the serum should be injected intravenously, and about ten c.c. intramuscularly. The intraspinal and intramuscular injections are repeated in twelve hours, and then every twenty-four hours till the fever falls and the symptoms abate.

KENTUCKY MEDICAL JOURNAL

BEING THE JOURNAL OF THE KENTUCKY STATE MEDICAL ASSOCIATION

Published Under the Auspices of the Council

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BOWLING GREEN, KY., FEBRUARY 1, 1917

No. 2

EDITORIAL.

NURSES AS ANESTHETISTS.

The medical profession of Kentucky has usually been successful in solving the problems presented to it in their early stages and before they became acute. It was probably with this idea in view that the Committee on Medical Ethics reported, and the House of Delegates at Hopkinsville, unanimously adopted the following:

"It is unprofessional for a physician to assist unqualified persons to evade legal restrictions governing the practice of medicine, and physicians should expose without fear or favor, before the proper medical or legal tribunals corrupt or dishonest conduct of members of the profession.

"Your Committee in this connection desires to call your especial attention to a violation of these principles of ethics in the employment by surgeons of nurses and others as anesthetists who are not trained in the practice of medicine. It is urged that this is a procedure under the control of the surgeon, but we submit that neither law nor usage permits surgeons to decide who shall be permitted to practice medicine. In addition, few surgeons are qualified better than others of the profession in the administration of anesthetics. In order, therefore, to stop this evil now, your committee recommends that the medical profession of Kentucky requests its members not to employ other than qualified physicians as anesthetists except in cases of emergency. In order to make the request urgent and effective, we would suggest that the profession should not refer cases to hospitals where nurses are allowed to give anesthetics, and that hereafter no member who so violates the law and ethics shall be considered in good standing in this Association.

"Every physician likes to think that he is ethical, and it lies in the power of each one of us to be so.

"A physician should not only strive to

stand high in the community, but with his professional associates also.

"The majority of physicians are ethical, and the medical profession must continue to draw a wide line between quackery and ethics."

In an editorial of the *Journal of the Michigan State Medical Society*, Dr. Warnshuis, its distinguished editor, a fellow of the American College of Surgeons and a member of the Michigan State Medical Board, writes as follows:

"The movement on the part of the Ohio State Medical Board to abolish the nurse-anesthetist abuse, should and must receive the approval and support of a united profession. The administration of an anesthetic should never be entrusted to any but skilled individuals, trained to select the safest agent for each individual case. That nurses, after three years' hospital training and a few months' experience in the giving of an anesthetic, are deemed competent anesthetists, is preposterous, if not criminal. Such individuals are wholly incompetent to make a physical examination, to detect renal, circulatory and respiratory defects. Neither can such nurses estimate the variance from the normal that disease or surgical conditions have produced. Consequently there will be evidenced a marked inability to select the safest indicated anesthetic agent or to be alert to the precautions that must govern its administration. It is from the legal standpoint unlawful and a violation of the Michigan Medical Act for other than registered physicians to administer an anesthetic. They who violate the law are amenable to its penalties."

The action of the Ohio State Board is referred to in the January issue of the *Ohio State Medical Journal*, as follows:

"Giving recognition to Lakeside hospital's training school brings to an end a controversy which has existed between the board and the administrative heads of the hospital since last August when the board withheld recognition of the school on the ground that charges had

been made that the law regarding the administration of anesthetics by other than licensed physicians was being violated at the Cleveland institution and that it was giving courses in anesthetics to nurses for the purpose of violating the law.

At a hearing, which attracted more than statewide attention, the authorities at Lakeside hospital admitted the charges were technically true. They contended, however, that their action was not in violation of the spirit of the law but an advance step in hospital management. Further negotiations with the board resulted in the hospital officials giving a statement that the teaching of the administration of anesthetics to others than legally qualified persons and the practice of allowing others than legally qualified persons to administer anesthetics, had been discontinued. Following the receipt of this statement, the board placed the nurses' training school on the recognized list."

We understand that it is contended that many prominent surgeons are using nurses as anesthetists. In some cases the nurse is paid a salary and no additional charge is made to the patient for the anesthesia. In other cases, the nurse is paid a salary and the surgeon charges the regular anesthetic fee and pockets the profits. Either plan is an economic mistake from the viewpoint of the Kentucky State Medical Association. It is interested in the success of physicians, surgeons or anesthetists because they all are members of our common profession. Until this distinctly commercial subordination of the real interests of the profession and people to that of particular surgeons, there has been no attempt to set up an artificial standard of admittance under the guise of assistants. If a surgeon can ask a nurse to administer an anesthetic, he can have her do every other thing that is now done by the physician. We have heard it said a few times that the average doctor is not a safe anesthetist. It might be said, with quite as much truth, that the average doctor is not a safe surgeon, or not a safe proctologist, or not a safe roentgenologist, or not a safe specialist in many other lines, but there are plenty of physicians who are safe anesthetists, and practically every surgeon in Kentucky has access to a number of them. This whole matter is so important that we are giving this space to it and we are ready to give as much more, if any of our members desire to use it. We would be pleased to have any of the members of the Association discuss in our columns any of the phases of this most important practical matter. Lakeside Hospital of Cleveland has been possibly the most prominent offender in the matter in past years, and it is of interest that they have

stopped the practice, under pressure from the Ohio State Medical Board.

The following letters from our own distinguished Attorney General, Hon. M. M. Logan, to Dr. E. F. Horine, clearly sets forth the law in Kentucky:

March 8, 1916.

"You have this day submitted to me resolutions adopted by the Louisville Society of Anesthetists, with the request that I give you an opinion as to the proper construction of Section 2618 Kentucky Statutes.

"This resolution sets out the fact that the administration of an anesthetic involves immediate as well as subsequent grave danger to the life of the patient, and it is therefore insisted by your society that an anesthetic should be administered only by one who has medical knowledge and training. It is insisted that the responsibility of the anesthetist is second only to that of the operating surgeon himself, and that to permit any person other than a man learned in medicine or possessing proper medical knowledge and training to administer anesthetics would be dangerous to life and health.

"I judge from the resolution passed that it is contemplated by at least some persons connected with the medical profession, or engaged therein, to have anesthetics administered by some one other than by legally qualified physicians.

"I beg leave to state to you that I have but little technical knowledge of medicine and surgery, but I do not think that the matter which you submit is difficult of solution. I have only had the opportunity to give the matter brief consideration, but I am firmly of the opinion that no person should be permitted to administer an anesthetic unless such person possesses the qualifications and requirements provided in the laws of this State for the practice of medicine and surgery.

"It may be argued that the administration of an anesthetic by some person under the immediate directions of the physician would be unobjectionable, but even if this is true, which I cannot concede, the fact nevertheless remains that a person administering an anesthetic is engaged in the practice of medicine, and unless the person so administering the anesthetic has complied with the laws of this State for the practice of medicine, he would be acting in violation of the law and subject to the penalties therein prescribed. The aforesaid section of the statutes provides in part as follows:

"Any person living in this State or any person coming into this State who shall practice medicine in any of its branches," * * * shall be deemed guilty of a violation of the law and subject to a fine. The administration of an anesthetic is unquestionably the prac-

tice of one of the branches of medicine and surgery, and no person has a right under the laws of this State to administer an anesthetic who has not been qualified as provided in the laws of this State for the practice of medicine, and any person guilty of such practice without having first complied with the law would be subject to the penalties prescribed by the law.

"I have written this letter hurriedly, and without an opportunity to give the question the consideration it deserves, but I have at least stated my conclusions although my reasoning may be faulty.

Signed: "M. M. LOGAN,
"Attorney General."

April 18, 1916.

"Replying to your communication of the 7th, I beg to advise you that further investigation only confirms me in my opinion that, under the provisions of Section 2618, Kentucky Statutes, a non-medical anesthetist does not have the right to administer an anesthetic.

"Yours truly,
M. M. LOGAN,
"Attorney General."

It must be clearly understood that there is no difference of opinion between physicians and nurses on this subject. The registration laws for nurses in most states, as in Kentucky, were passed with the active assistance of the medical organizations. In Kentucky we are so dependent upon our nurses for so much that is best in the modern treatment of disease that we would view with distinct disfavor any such enlargement of their sphere as would make them petty doctors—we have enough such—rather than members of a noble profession as honorable as medicine itself. The law in no state contemplates the nurse as part-doctor. To be successful she must be an *all-time nurse*. In attaining complete success in this aim, our nurses will always have the sympathetic assistance of every competent physician.

* * * *

Since the above was written, at the instance of Dr. Louis Frank and his nurse-anesthetist, Miss Hatfield, the State Board of Health has agreed upon a test case in the courts in the hope that an early decision of the Court of Appeals will finally settle the matter. The State Board of Health will be represented by the Attorney General, aided in so far as he desires it by Kohn, Bingham, Sloss and Spindle, of counsel for the Kentucky State Medical Association, while Dr. Frank and Miss Hatfield will have Hon. A. J. Carroll as their attorney. The JOURNAL bespeaks the patience of the profession, with the hope that

the wise interpretation of the law by Gen. Logan will be sustained.

In our news columns we publish the agreed case in full for the information of our readers.

A DISAPPOINTED ADVERTISER.

The following letter was received by the Editor this morning:

"Chicago, Ill., January 5, 1917.—KENTUCKY MEDICAL JOURNAL, Bowling Green, Kentucky.—Gentlemen: It has been a source of the greatest disappointment to us in looking over our records to find that we have received neither inquiry nor cases from your state through our efforts to present our work in your JOURNAL, and we cannot help but feel that we are not being accorded the cooperation which our work and its results merit from your State Society.

It occurred to us that a reading notice in your JOURNAL might do some good in stimulating the interest of the medical profession of your State, and result in mutual good to patients coming here, as well as to ourselves.

"We are enclosing suggestions for copy, which we trust may find space in your next issue.

"Thanking you for any efforts you may make to cooperate with us,

Sincerely,
"THE HYGEIA HOSPITAL,"

If you and the other readers of the JOURNAL were treating many of our advertisers like this, we would soon have none. We are being perfectly frank with our advertisers and have written letters not only to those who are now patronizing us, but to many prospective ones, that we do not want their money unless they get results from taking space with us. You cannot expect us to continue to get results without your help. We guarantee our advertisers for their advertised statements or products, and we feel that we have a right to expect the cooperation of the readers of the JOURNAL who are the beneficiaries of this policy. We cannot continue to publish the JOURNAL if we get many letters like this one, and we will get them unless you are doing your part in helping to make it profitable to our advertisers who furnish us with a good JOURNAL. Fortunately, in the course of a month's mail, we get many letters from those who are pleased with the cooperation they are getting from the medical profession of Kentucky. Look in each of the advertising columns of this issue of the JOURNAL and write a few letters of inquiry in regard to the things in which you find yourself interested.

THE LEXINGTON LEADER—AN HONEST PAPER.

The *Lexington Leader* published on Sunday, the last day of the year, an interesting editorial which should commend itself not only to all of its readers, but to every thoughtful citizen of the Commonwealth. The editor and publishers of the *Leader* know how effective the printed word is; they recognize that their readers who believe in their editorials and are interested in their news items can not help being influenced and frequently guided by their advertisements. In eighteen months the advertising actually offered the *Leader*, and refused by it, would have paid them a gross revenue of \$4,156.25. The *Leader* recognizes the hypocrisy and cant of refusing to accept advertisements of intoxicating liquors and then accepting so-called patent medicines which contain them or other worse habit-forming drugs. The editor well says that "the management of *The Leader* is ambitious to publish a newspaper which can be read aloud in the family circle, in mixed company, without embarrassment, by any member of the family, young or old, boy or girl, this rule to apply to both the news and the advertising columns of the paper." It is pleasing to note from the report of the *Leader*, that honesty is still the best policy in Kentucky, and, in spite of this loss of gross revenue, which it seems so large as to be disheartening at first glance that the net income of the *Leader* Company has been larger this year than ever before.

Among the refused advertisements were: Swamp Root, Eckman's Alterative, Cascarettes, Duffy's Malt Whiskey, Tanlac, Haarlem Oil, The Bucklen's, The Hood's, Beecham's Pills, Nature's Remedy, Kondon's Jelly, Dr. King's New Discovery, Lydia Pinkham's and similar well-known exploiters of nostrums, some of which are dangerous, and all of which are worthless.

It is a pleasure to commend such newspapers as *The Leader* as the greatest allies of those who seek to protect the health and lives of the people of Kentucky.

DR. HANES, PRESIDENT.

THE JOURNAL desires to congratulate the Jefferson County Medical Society upon its election of Dr. Granville S. Hanes, as President for 1917. Dr. Hanes is not only one of the leading Proctologists of the world, but is a surgeon, a clear and logical clinician, and one of the most genial and effective gentlemen in Kentucky. The elevation of such a man to the presidency, while he is still young and active, insures a successful administration of the society's affairs for the coming

year, and, at the same time, indicates to the profession the country over, that the Jefferson County Medical Society is giving its honors to those to whom honor is due.

HEROIN.

It will be of interest to the profession of Kentucky, to know that the committee on social hygiene of the National Committee on Prisons, has, for a number of years, had a subcommittee on drug addiction consisting of Drs. Samuel W. Lambert, Frederick Peterson, Charles F. Stokes, Frederick Tilney and Simon Baruch. For the past several years, this committee has been investigating the value of the drug, heroin, and after careful tests, they have decided that it is of no real value to the practice of medicine, and that its place may be better taken by more efficacious agents that do not menace public welfare, and the Congress urged to pass such laws as will prevent the imposition, manufacture and sale of heroin in the United States of America.

THE JOURNAL commends the suggestion of this distinguished committee to the careful attention of our readers, and trusts that before long heroin will be among the forgotten drugs.

"THE NERVO-MUSCULAR MECHANISM OF THE EYES AND ROUTINE IN EYE WORK."

The JOURNAL takes great pleasure in announcing the receipt of a little volume recently published by that Master of Ophthalmology, Dr. G. C. Savage, of Nashville, Tennessee. Dr. Savage's original work under the above title has been recognized all over the world, and no physician who desires to familiarize himself with diseases of the eye can afford to be without this little book. Particularly that section of the book covering "Routine in Eye Work" appeals to us. The opening paragraph is an earnest of its value, and from it we quote:

"The title of my address presupposes preparedness for practice. The past, in many instances, would not justify this presumption, for it has been notorious that "the six-weeks' postgraduate course" has plunged many a man into eye work without proper preparation. As out of the old-time medical course of 2 years, which never did get one prepared for practice of medicine and surgery, there occasionally grew giants—such as Flint, Gross, and others—so out of a course in ophthalmology all too short there have sprung some men of might in our specialty. The real preparation of these men began after their short courses of study, under teachers, had ended, and was carried on by dint of personal effort

in private study and meditation, long continued.

"The heights by these men reached and kept
Were not attained by sudden flight;
But they, while many comrades slept,
Were toiling upward in the night."

A CROOKED PROPOSITION.

Dr. J. Q. Taylor, the distinguished Chief Surgeon of the Illinois Central Railroad, at Paducah, has sent the JOURNAL a letter, circular, and an unsigned check for \$25.00 from what purports to be a sanatorium for the treatment of drugs and alcoholic addicts at Memphis. Dr. Taylor well says that no reputable sanatorium or institution would send out such literature and expect the respect of decent doctors. The whole proposition is so thoroughly bad that no one who is not, himself, crooked or criminally careless will be caught by so obvious a fraud.

DIRTY DOCTORS.

The Journal of the Kansas Medical Society well says, that people are not strongly impressed by the views upon hygiene and personal cleanliness of a man who is not, himself, clean. People are but slightly impressed with the dangers of infection when they are examined and treated in an office which is most remarkable for its filth. This subject of hygiene has become entirely too popular for the doctor who is too lazy, too indifferent or too busy (and, we might add, too ignorant) to apply the ordinary rules of sanitation to himself and his office. The people will not longer tolerate a careless disregard of the most simple hygienic rules in those to whom they entrust the care of their ailments.

The Indiana State Board of Health has adopted strong resolutions in which they set forth that a survey has clearly indicated that many physicians, surgeons and dentists' offices are dirty, and that many members of these professions are personally unclean, and it has detailed an inspector to go from office to office in that state with the purpose of finding these unsanitary and unclean conditions and correcting them.

We feel that there is a rather better way to correct the evident faults of the profession along this line, and, that is, that this important subject shall be considered and discussed by the county societies. The children are being educated in the public schools of Kentucky, that a dirty doctor is as dangerous as a dog with hydrophobia, in fact, he is more dangerous, because you can kill the dog, and the dirty doctor can only kill the patient. We are glad that there are very few doctors in Kentucky, to whom this ugly adjective can be ap-

plied, but there are many of us who are careless in a greater or less degree in our personal habits and who can reflect greater credit upon the profession by correcting them. If we fail to take stock and improve such conditions, it is only a question of time until they will be improved for us by the outraged public.

CONSTIPATION, OBSTIPATION AND INTESTINAL STASIS.

In our Book Reviews, attention is being called this month to a work under the above title by Dr. Samuel G. Gant, who is, at present, of New York City. Dr. Gant is one of the really great men in American medicine. The fact that he married one of the most charming daughters of the State of Kentucky probably accounts for much of this, but, whatever the etiology of his ability, he has presented to the profession a concise and practical treatise on the etiology, pathology, symptoms, diagnosis and treatment of constipation and intestinal obstruction. Dr. Gant's remarkable work with both the non-medical and surgical treatment of these affections, has enabled him to emphasize in this work the drugless management of constipation and its allied evils. He especially emphasizes the methods of recognition and care for the minor types of chronic obstipation which are, in themselves, sufficient to cause varying degrees of discomfort, but which rarely end in death.

Many books which come from the printers are merely compilations from the authorities. Dr. Gant's work is original, interesting and thoroughly practical. No one who is practicing medicine can afford to be without it.

Treatment of Bacillus Pyocyaneus Infection.

--Kenneth Taylor (Journal A. M. A., November 25, 1916) recalls that much trouble in the healing of wounds has been encountered from their infection with the bacillus pyocyaneus. This organism has proved very difficult of removal from infected wounds. Studies were undertaken to discover a means of ridding the tissues, and it was found that the organic acids seemed specifically inimical to its growth. Of these acetic was the most effective. On the strength of experiments with this and other disinfectants in vitro clinical use was made of a one per cent. solution of this acid in normal saline. Comparative observations were made of the effects of a number of other disinfectants in a large series of cases, but none was found which would remove bacillus pyocyaneus from the wounds except the solution of acetic acid.

SCIENTIFIC EDITORIALS.

THE INFLUENCE OF ANALINE DYES ON THE HUMAN AND ANIMAL SKIN.

With the growth of the new industries of dye and drug manufacture from coal-tar products many cases have been observed among the workers in such factories of various toxic manifestations. In the main the symptoms fall into two classes: those due to injury to red blood cells, and those due to skin reactions. It may be possible that the action of these compounds—and the same may be said of certain other drugs, such as the iodides—is due to an action on certain susceptible cell proteids, so changing these proteids as to make them foreign to the organism and therefore capable of producing anaphylactic reactions. It has been observed that where the absorption of the drug is by mouth or through inhalation of the fumes that the blood is most apt to show the effects of the poisoning, while where the contact is through handling the dye stuffs, so that they come into direct contact with the skin, dermatoses are most apt to occur, both localized and general.

Laboratory investigations have corroborated the observations of the clinicians, since it has been shown that the effects of the poisoning can be secured by rubbing the dye into the skin as readily as if ingested per os. Unna and Golodez have been among the leaders in these investigations and our knowledge of the subject is largely due to the work of these men and their followers. Their experiments are still being carried on, but owing to the European war they have not been reporting the results of their work. From their reports and from our own experience we may discuss the action of the dyes along these lines.

Examinations of the dermatoses reported among the workers in dyes shows that most of the cases fall under the head of various types of eczema (dermatitis), acneform eruptions, papillomatous and verrucous growths, and even occasionally, though rarely, pure epitheliomas. In the case of those dyes which were non-poisonous, contact with the skin was not nearly so likely to produce a skin reaction and when it did the reaction was due to a purely mechanical irritation. The action of the dyes under investigation must be carefully distinguished from the action of any impurities left mixed with the dye through the process of manufacture. Nitro-benzene, arsenic and various acids are often present, in the dye, especially when they are not purified carefully; these chemicals are apt to cause decided symptoms even when the dye with which they are mixed is absolutely harmless

otherwise. In going over these cases one is struck by the great variation in susceptibility of different individuals to the anilin dyes; thus, certain workers will handle a dye without any precautions for a long time without showing any symptoms, while the single application of the same dye to another individual will cause a prompt skin reaction, with marked signs of a general intoxication.

In experiments of the action of the anilin dyes on the skin of animals certain phenomena were fairly constant. The dye under investigation was either rubbed into the skin or else an oily or watery emulsion was injected into the skin of the inner surface of the ear of a rabbit. When Biebrich's scarlet red (a compound formed from diazotized amido-ortho-toluol and beta-naphthol), brilliant red, Kraplac or madder-lake (an Alizarin dye), light yellow and green lake,—when any of these were rubbed into the skin there was a prompt reaction with well marked histological changes. These changes were especially in the epithelial structures; most marked was the proliferation of the prickle cells of the rete Malpighii; there was also dilation of the perinuclear spaces of these cells and a broadening of the rete pegs; a hyperplasia of the sebaceous glands was common. The result of the continued application of these dyes was to cause an acanthosis, verrucous overgrowth or even epithelioma. As controls on these experiments white lead, Berlin ultra-marine and vermilion were also used, but the results were quite different, none of this class causing any tendency to epithelial proliferation. When these anilin dyes were injected into the skin inflammatory manifestations soon appeared at the point of injection. Particularly was this true when scarlet red was used. In some cases the dye caused a decided necrosis, in others there was the stimulation of epithelial proliferation even to the formation of epitheliomas.

As to the use of the anilin dyes in therapy, so far it has been in the main along two lines: to prevent bacterial growth and to stimulate wound healing. For the first purpose the compounds most used are the hexa and pentamethyl-pararosanilines, since these seem to have a specific action on certain streptococci, due to a much greater affinity for the microorganisms than for the cells of the host. For the second purpose Biebrich's scarlet red has been most used; it has been found to promote granulation and the healing of ulcers and denuded areas largely through its stimulation of epithelial regeneration. A 10 per cent. ointment of brilliant red was found to act more quickly in this way than the same strength of scarlet red. All of the above mentioned dyes were tried on malignant tumors, but though some good results have been reported we ques-

tion very much whether it is of any efficacy in such cases. Certainly from what we have seen of its use it would seem to be contraindicated in malignancy, since it tends to cause more proliferation where there is already an excessive proliferation of cells. Quite different is the use of such compounds as eosin-selenium and others of that class; here the organic radical is supposed to carry the metallic radical, possibly even to act as a binding agent to enable it to act on the malignant cells. There is much new work being done on the action of those vital dyes which can enter and stain certain cells during life; it is possible that we shall learn from this work the difference between the affinities of the various cells of the bodies and how to introduce compounds which will be able to act only on certain cells without being taken up by other cells. A great field seems to open out before us along those lines, which is not much different from the lines followed by Ehrlich in his work in chemo-therapy which lead to the introduction of salvarsan.

M. L. RAVITCH AND S. A. STEINBERG.

Syphilitic Superinfection and Reinfection.—

Littore Mariotti (*Giornale italiano delle malattie veneree e della pelle*, September 20, 1916), in reporting two cases, gives an exhaustive review of the literature and concludes that it is not impossible for a syphilitic patient to sustain a new infection during any stage of the disease. During or after energetic antisyphilitic treatment the patient may acquire an exogenous reinfection. Energetic mercurial treatments, especially injections of calomel, greatly attenuate the infection and impede the corrosive action of the specific toxin.

Breathlessness in Cases of Irritable Heart.—

Thomas Lewis (*Brit. Med. Jour.*, October 14, 1916) states that from a study of a large group, several cases were found in which the breathlessness could not be attributed to the usual factors such as acidosis and respiratory or circulatory embarrassment. In these cases there was found to be a relative deficiency in the "buffer" salts of the blood so that when all of the contained carbon dioxide was shaken out the blood was more alkaline than normal blood. In the presence of the normal content of carbon dioxide the blood was just on the acid side of normal and an additional amount of carbon dioxide produced an abnormal increase in the blood's acidity. These results were confirmed by the electrometric determination of the hydrogen ion concentration and the relative absence of the "buffer" salts was proved by the addition of very small amounts of them to samples of the blood, and retesting the reactions.

ORIGINAL ARTICLES

SOME IMPORTANT DIAGNOSTIC POINTS THE GENERAL PRACTITIONER SHOULD KNOW ABOUT THE EAR.*

By SELDON COHN, Fulton.

One of the most important diagnostic points of acute ear affection is pain; usually the first symptom we have is ear ache, so common in some families as to be thought one of the necessary ills of childhood. In nearly every case this is evidence of an actual inflammation of the mucous membrane lining of middle ear. A child subject to ear ache is in danger of deafness and no care should be spared not only for the relief of the present distress, but in ascertaining and removing the cause. It rarely will be found even after a single attack of pain, that the hearing of the affected ear is normal. The pain may vary from a dull ache to the most intense anguish. Often the pain is most severe at night. In children too young to tell the cause of distress, its seat will often be pointed out by unconscious movements of the hand to the affected ear. Frequently in young children, after several days of suffering, a discharge of pus from the meatus reveals the diagnosis to the astonished friends, so when a child cries and shrieks from an unknown cause the ears should be among the earliest organs to be investigated.

The pain is not always confined to the ears themselves but extends to the adjacent parts, also the nerves of sensation of the affected side of the head may share in the distress, which is further aggravated by movements of the muscles, as in mastication, frequently the pain extends to the teeth, especially if any of them are decayed until the patient scarcely knows whether tooth ache or earache most predominates. The severity of the pain is, to some extent, a gauge of the violence and character of the inflammation, the severer form, especially when constant, indicating the probability of suppuration with all its attending dangers.

As in many other diseases, the presence of pain, when rightly interpreted, is fortunate, for it comes as a warning of impending danger to the hearing, demanding measures for instant relief, which at the same time shall furnish a safeguard against the rapid impairment of a delicate and sensitive organ.

Of the symptoms of acute otitis media, next to pain, which we have already considered, comes tinnitus. Subjective noises of some kind are rarely absent. A thumping,

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

pounding, or beating sound, synchronous with the heart action, is most common in the earliest stage of the disease.

Children often mistake these sensations for real objective noises, and inquiry as to their meaning or cause is sometimes the first indication of the existence of disturbances in the ears. Later the tinnitus is of a more steady and continuous character described as rushing, roaring, singing, or buzzing.

Those sounds of a pulsatory or arrhythmic character are due to the increased circulation in the arteries and dilated capillaries in close continuity to the sound perceiving termination of the auditory nerve. Those of a steady and continuous character are due, at the first at least, to increased venous circulation, which is heard by the ear itself in the same manner. In a later stage there may also be tinnitus due to pressure on the contents of the labyrinth through the oral and round windows from swelling or retained secretion in the middle ear. To children these noises are often terrifying, in all cases they are productive of a greater or less degree of nervousness and distress.

Deafness is the next objective symptom noticed by the patient. In the milder cases some days may elapse before the hearing becomes much impaired.

Slight degree of deafness may not at first be noticed by the patient, especially if the affection is unilateral. But soon familiar sounds, like the ticking of a clock, becomes inaudible then the patient begins to ask repetition of what is said by those around him and finally hearing is for the time almost abolished.

The degree of deafness in the earlier stages at least depends much upon the localization of the affection.

Should the attic of the tympanum be most affected the hearing may suffer but slightly at first although the pain be most severe. When the Eustachian tube is most affected, the stopped-up feeling predominates over the deafness.

Besides deafness there may be the modified hearing of autophony, in which the patient hears his own voice strongly changed and resonant. There may also be diplacusis, or hearing sounds in a different pitch from that perceived by the unaffected ear.

As to the constitutional symptoms, they are sometimes ushered in by a chill. There is general uneasiness, loss of appetite and increased temperature, sometimes headache, dizziness and possibly nausea are present.

As in other acute disease the general disturbances will be greatest in patients of a nervous temperament.

If a tuning fork in state of vibration be now applied to the vertex or the teeth the

sound will be heard more clearly on the affected side.

The examination of the drum membrane usually reveals more or less redness, even in the early stages of the attack the hyperemia shows itself by beginning at the tympanic margin and extending toward the center with more or less rapidity.

The vessels which follow the handle of the malleus, unseen in health now become visible.

All the landmarks may be lost, as the hyperemia involves the adjacent portion of the meatus, swelling shows itself at any point according to the localization of the inflammation. As in all inflammations of the mucous membrane the secretion soon begins to increase. A serous exudation pours out, which may sometimes be distinguished through the still transparent drum membrane, partially filling the cavity of the tympanum, like the liquid in a spirit level.

In severe cases the cavity quickly becomes filled, and a few hours may suffice for the pressure of the confined liquid to cause a rupture of the drum membrane. As the Eustachian tube has been closed by the swelling of its lining membrane the drum head affords the point of least resistance, and becoming softened, yields from the pressure within.

Often the liquid takes on a purulent character and may be seen pointing at some bulging portion of the membrane before rupture takes place.

After the evacuation of the secretion, whether from spontaneous giving away of the membrane or from surgical interference, there is usually great relief of pain.

The amount of discharge may be very slight, but is at times most profuse and continuous so as to moisten many thicknesses of compresses and bandages. In favorable cases the untoward symptoms now rapidly subside.

The pain diminishes and disappears, the noises become less violent and annoying, the temperature falls and the patient is able to obtain rest and the general recovery is rapid.

The deafness, the last effect to disappear, gradually or sometimes quite suddenly gives place to perfect hearing. Unfortunately many cases do not end so well.

Treatment of Gonorrheal Iritis by Polyvalent Vaccine.—S. G. Mansilla (Revista de Medicina y Cirugia Practicas, October 14, 1916) reports a case of iritis occurring in a man with an uncurd gonorrheal urethritis of fourteen years' standing which was successfully treated with polyvalent gonococcus vaccine. The local reaction in the eye was violent following each injection, but the ultimate result was excellent.

SOME IMPORTANT DIAGNOSTIC POINTS THE GENERAL PRACTITIONER SHOULD KNOW ABOUT THE THROAT.*

By H. G. REYNOLDS, Paducah.

That much of the so-called rheumatism of the past has been placed by modern research under the head of infection and that many of these infections arise from the sinuses, teeth, tonsils, etc., assures us of the importance of this symposium to the general practitioner.

As your committee has assigned to me the throat in this symposium, I shall take up the tonsil as the greatest menace in this respect in the throat.

While I realize that many sins have been committed in its name, it is nevertheless a great offender and deserves the fate of complete removal when we have concluded to rid our patient of them.

Barnes in his writings on the tonsil says, "that the most convincing evidence we have that the tonsils are among the most important of the primary foci from which systemic infection may take place, is derived from the post operative results of tonsillectomy. Joint, heart and kidney lesions often show such marked improvement as to leave no doubt whatever of the origin of the infection. This applies not only to those cases in which local tonsillar symptoms are or have been present, but also to many cases in which such symptoms are absent, the tonsil being small and without demonstrable suppurative lesion or retention in the crypts."

In advocating the tonsil as a fruitful source for systemic infection, I would not overlook the other possibly more important sources, such as the teeth, intestinal tract, ears and nasal accessory sinuses, etc.

One authority groups under four heads the disturbances that are commonly attributed to infected tonsils:

1. Acute and chronic tonsillitis (symptoms in the tonsils themselves).
2. Disease of the contiguous mucus membrane that is pharynx, larynx, trachea, bronchi, Eustachian tube and middle ear, arising from the pouring out of infected secretion from the tonsilar crypts.
3. Remote secondary infections, such as rheumatic arthritis, pericarditis, etc.
4. Local infection involving the glands in the neck contiguous to the tonsil, giving rise to symptoms in this region, presumably through involvement of the nerves, often by direct irritation or inflammation, but sometimes, through reflex involvement, resulting in neuralgia and functional disturbances.

It is only comparatively recently that any but the first of these were recognized as an excuse for removal of the tonsil, but now they are most diligently sought after as a focus from which many general pathological conditions may arise.

I want to cite the case of a doctor who recently came under my care suffering with a uveitis.

After eliminating syphilis and tuberculosis by the Wassermann and tuberculin test and by physical examination failing to determine the cause of his trouble, we placed him on eliminative treatment which he continued for a time without any improvement, in fact, seemed to grow worse, so at our suggestion, living close to Chicago, he consulted Billings, Shambaugh and Wescott, who decided his tonsils were the source of his trouble. These were removed by me a few days ago and at the present time he is on eliminative treatment.

What the outcome will be is too soon to predict, but I will say that his tonsils contained some pus deep down in the crypts, and that with the exception of some slight rheumatic pain there was absolutely no other evidence of systemic infection unless the eye trouble comes from this source.

This illustrates pretty clearly the class of cases where the tonsil is removed when it has been impossible to find any other focus of infection, and I am frank to say that unless I had been ordered, so to do, by an internist of such reputation, I would not have suggested the procedure myself. On the other hand, I shall cite another case that occurred in the practice of Dr. Wescott, illustrating to his satisfaction the certain improvement following the removal of the tonsils and which proved very conclusively that this was the source of infection.

"An engineer sustained an injury to one eye from a blast of dust. When I first saw him six days after, his eye was very red and sensitive to light, and the cornea hazy. There was no foreign body in the cornea, and pupil reacted perfectly, and the iris was normal in color, but slightly swollen from hyperemia. Four days later, there was a well-marked iritis with adhesions to the lens capsule, which were broken up with difficulty with atropin. Atropin and hot fomentations, rest and salines were ordered, and sodium salicylate gr. xv., three times a day. The tonsils were not acutely inflamed, but pus could be expressed from one of them, and immediate tonsillectomy was advised. No impression was made on the iritis by treatment described until the tonsils were removed eight days after the appearance of the iritis. But four days after the operation the eye began to get white and the atropin was stopped. Ten days after the opera-

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tion, vision was normal and the eye free from inflammation."

Wescott claims in an article on this subject, that by investigation carried on in connection with other men, he is convinced that 25 per cent. of the iritis is due to infections derived from some such focus as the tonsil, the sinuses of the nose and the teeth, and that the tonsil is not the least responsible of these for such infection.

Furthermore he says that wherever he has made a study of the patient in chronic arthritis the gonococcus or streptococcus has been found, and that it is therefore evident that not longer can we positively say that 50 per cent. of the iritis is due to syphilis.

The connection between chorea, kidney and heart trouble and the tonsils is frequently demonstrated by an improvement in these diseases on the removal of the tonsils.

While it has been preached for sometime that the small fibrotic tonsil is likely to be more dangerous than the large, still I am certain that many men in general practice cling to the idea that only the large can do harm.

Willis examined twenty-nine cases of tubercular cervical adenitis and reached the conclusion that 86 per cent. showed involvement of the faucial tonsils and that their removal induced absorption of granular involvement and prevented or reduced the frequency of further systemic infection.

So far I have confined myself to the tonsil as a focus of infection. I feel that anything written on this subject would be most incomplete without the mention of diphtheria, infectious sore throat, etc.

We are taught that when in doubt as to our diagnosis in diphtheria, give antitoxin.

I am satisfied that we have all had this doubt in our mind and often felt that we would like some more definite means of diagnosis.

From some of the reports of the Shick test, I am convinced we have a means that will when its use has been more generally practiced, aid us greatly in diagnosing diphtheria, lessen the consumption of antitoxin and materially change our management of an epidemic of this disease.

Bunderson reports on 800 tests with Shick reaction and reaches the conclusion that by means of this test we are in a position to tell who is susceptible to diphtheria and when an epidemic breaks out we can inject those and those only, paying no further attention to those giving a negative reaction.

Lynch says, "that we all know how difficult it is in certain cases to make either a clinical or bacteriologic diagnosis of diphtheria, and in such cases, especially, where the patient has previously had injections of anti-serum,

either as a prophylactic or therapeutic measure, one hesitates to give antitoxin because of the danger of anaphylaxis or the less dangerous but severe serum reaction.

The differentiation of diphtheria from Vincent's angina is difficult and can in many cases only, be made positive by means of the microscope.

If a culture shows negative for diphtheria it should be examined for Vincent's angina.

Many of the so-called cases of ulcerative sore throat or "gangrenous tonsilitis" are in reality Vincent's angina.

As the treatment of these conditions are entirely different it would seem that more effort would be made to make this differentiation. I am glad to notice that the State Board of Health has ordered a culture, or I believe two from each case of diphtheria before allowing them to leave quarantine. I think it would take another good step forward if it ordered a culture from every suspected case of diphtheria when first seen by the physician.

I might say much more on this subject, there is much more to say, but the mere mention of diphtheria in a meeting of medical men is certain to bring out an abundant discussion.

SOME IMPORTANT DIAGNOSTIC POINTS THE GENERAL PRACTITIONER SHOULD KNOW ABOUT THE NOSE.*

By GAYLORD C. HALL, Louisville.

In this paper the following points will be considered: Obstruction, discharge, hemorrhage, pain, tenderness, headache.

OBSTRUCTION.

The most frequent symptom about the nose for which people seek a physician is obstruction. It had best be considered separately in infancy, childhood and adult life.

In Infancy. In infancy obstruction occurring directly after birth as snuffles with excoriation and cracking of the lips is often diagnostic of hereditary syphilis. Later in infancy one often finds a stopped up nose in babies who have a diet with excessive sweets and who are overdressed and get insufficient fresh air. Correction of habits in these cases often cause a disappearance of symptoms though occasionally the adenoid tissue in the naso pharynx must be removed even at this early date. As a general proposition I think that these operations should be avoided if possible.

Childhood. From three to eight years of age we begin to see frequent cases of nasal obstruction due to enlarged tonsils and

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adenoids. This is probably the commonest cause of nasal obstruction and the only means at our command for certainly relieving this condition is the removal of the offending structures. In this connection it may be well to remember that it is highly important that mouth breathing should be corrected before the eruption of the first permanent (six year molar) teeth as the orthodontist teaches that if these teeth erupt improperly the removal of tonsils and adenoids after that period does not prevent the malformations in development of the upper jaw, which will cause mouth breathing later on in life.

One-sided obstruction demands special attention. We think first of an injury that has resulted in broken and misplaced bones. This by the way, is not always revealed by the history. It can be definitely determined by inspection.

Foreign Bodies. Children often put buttons, shot, beans, peas, cotton balls, glass beads, and articles of every description into the anterior nares. After passing beyond the vestibule they are past recovery by the patient. Soon irritation commences with swelling and narrowing of the external nares, a foul discharge develops (especially if the body is organic) and excoriation of the upper lip occurs. Such a condition is quite characteristic and requires differentiation from only one other condition, nasal diphtheria. Here also we may have the one-sided obstruction, swelling, discharge, and excoriation of lip but we have also the membrane containing the characteristic bacilli which is not the case with a foreign body, though a membrane is sometimes present.

Late in childhood, about puberty, we often find a swelling of the turbinates that causes obstruction and one is tempted to advise operation for its relief. It passes off spontaneously as age advances and no turbinal tissue should be sacrificed.

Adults. In adult life obstruction may be due to deflected septa, hypertrophied turbinates, to polyps, (a symptom of sinus disease), malignant tumors, syphilis. To differentiate between these conditions one must possess the ability to use a head mirror and nasal speculum and must know how to shrink the tissues with pledgets of cotton soaked in adrenalin and cocaine. Recognition of the various anatomical parts in the nose is not a difficult one and I know of nothing that would better repay the time of the physician than to acquire a familiarity with these structures.

DISCHARGE.

A nasal discharge may vary from a thin serous fluid to the heavy crusts of an ozena. The thin secretion occurs as a nasal hydrorrhea in hysterical states though occasionally

it occurs as a leakage of cerebro-spinal fluid. It also occurs in attacks in hyperaesthetic rhinitis at all seasons and in cases of pollenosis at the season one is usually affected.

Purulent discharge from both nostrils betokens an infection of the nasal mucosa. If persistent it would indicate involvement of the sinuses of both sides. If the discharge appeared at the anterior nares it would indicate involvement of the anterior group of sinuses, namely, the frontal, antrum, and anterior ethmoid, whereas if it appeared in the nasopharynx one would suspect the sphenoid or posterior ethmoid. Posture, of course, influences point of emergence of the discharge.

A one-sided nasal discharge would strongly indicate involvement of the sinuses on that side, especially if occurring in an adult. It will be noted that in children the differential diagnosis of sinus affections can be practically disregarded since they are rarely encountered. The reason for this is apparent on considering the developmental process within the skull since in childhood the accessory sinuses of the nose are rudimentary.

Purulent discharge in children often follows the exanthemata and is regarded by many as the precursor of atrophic rhinitis.

Heavy crusts that form in the nostrils and are discharged with difficulty are characteristic of atrophic rhinitis.

In syphilis particles of tissue are often discharged but are composed usually of granulation tissue or necrotic bone. In some instances patients have blown polyps from the nose or pieces of malignant growths, the diagnosis being made by examination of the tissue expelled and by an examination of the nose.

HEMORRHAGE.

It has been said that nose-bleed may be a disease, a symptom, or a remedy. There is scarcely anything in medicine that can become more annoying and at times more alarming than a persistent nose-bleed. Nose-bleed occurs in children spontaneously, chiefly in the late spring, and is seen as a manifestation in whooping cough, the exanthemata and in the prodromal stage of typhoid. In these cases we see it as a symptom though to some extent as a remedy also as it reduces temperature and lessens cerebral congestion.

In adults we have hemorrhage in cerebral congestion especially if arteriosclerosis exists and here the bleeding may be a remedy preventing a rupture of a cerebral vessel by reducing the greatly increased blood pressure.

In ulcer of the septum we often have persistent nose-bleed that may be classed as a disease. The important thing to remember is that while in haemophilia and in certain essential blood diseases we may have a bleeding from the whole membrane the vast ma-

majority of nasal hemorrhages occur low down in front of the nasal septum and are best treated by compression with cotton soaked in cocaine-adrenalin mixture and the spot later cauterized under direct inspection with a chemical agent such as chromic or trichloroacetic acid. The area is protected with a generous coating of salve and no packing inserted, in the meanwhile treating the general condition of the patient vigorously to prevent a recurrence of the hemorrhage.

General Treatment. This should consist in morphine, hypodermatically, if the pulse is full and bounding and the patient excited. A brisk mercurial purge is ordered followed by repeated small doses of saline cathartics, and calcium chloride in ten grain doses. Some of the remedies designed to shorten the coagulation time immediately may be tried in severe cases, the preparation known as coagulo-se having given me satisfactory results.

I have omitted speaking of those cases of hemorrhage due to a special pathology such as malignant growths, polyps, and syphilitic ulceration of the nose since they are in a class to themselves.

Finally, let it be remembered that no amount of blind packing will ever be as effective in stopping hemorrhage as direct compression of the bleeding point under ocular inspection.

PAIN.

Pain in nasal disease is often characteristic. It appears just above the root of the nose or deep at the base of the skull. In acute affections it may radiate so as to include the whole head. It is usually worse in the morning and tends to pass off when the upright posture is assumed and drainage is established. The pain is due to the pressure of pent-up secretions. Drain these and the pain disappears. This explains the futility of administering pain-relieving drugs internally to relieve the pain of nasal disease. The indication is the relief of pressure by drainage. Inhalations of steam are usually efficacious especially if the membranes have been shrunk by a cautious application of weak cocaine and adrenalin. In sinus affections the pain is often indicative of the part affected. In frontal sinus infections the pain is over that region. In antrum affections beneath the eye and in the teeth. In ethmoid infections between the eyes. In sphenoid infections deep under the base of the skull.

TENDERNESS.

Tenderness is closely allied to pain and may be even more certain as a diagnostic agent. It is especially helpful in determining the involvement of the sinuses. I know of no especial point of tenderness in nasal disease exclusive of this. Pressure should be made

with the balls of the thumb and finger equally on each side and the difference noted: under the brow for the frontal sinuses; under the orbit for the antrum; between the eyes for the ethmoids. Points of tenderness developing over these areas indicate rather accurately the site of the involvement and much valuable information can be obtained by making these simple tests.

HEADACHES

The headaches of nasal diseases are, morning headaches, tending to pass off about noon, the patient in the evening feeling fine and with no thought of pain or discomfort until the next morning when the process is repeated. The incidence of these headaches is in sharp contrast to those due to ocular troubles in which a night's rest refreshes and the patients feel fine until the middle of the day, after which time headache becomes increasingly more severe until at night they may be almost unbearable.

In conclusion I wish you to carry away this thought. While the diagnosis of all nasal conditions is not easy and may some times tax the knowledge and ingenuity of the most careful student a great deal of the commoner pathology lies within the grasp of the average physician. He need only be equipped with a head mirror and nasal speculum and understand the shrinking of the turbinates with cocaine-adrenalin mixture. If he is at all familiar with the anatomical structures which he sees and can differentiate between them it would be a very simple matter for him to make an accurate diagnosis of most cases of nasal trouble.

DISCUSSION.

W. B. McClure, Lexington: As to the title of the first paper, "Some of the Things the General Practitioner Should Know About the Ear," I would say that the prime thing the general practitioner, as well as the specialist, should know about the ear is that, according to statistics, about 92 per cent. of all ear involvements have their origin in the nose and in the throat. It is not enough to treat the ear, but you must treat the cause back of it.

Dr. Reynolds referred to a patient seen by Dr. Shambaugh. I had the pleasure of being with Dr. Shambaugh for a time this summer, having taken a patient to Dr. Frank Billings, a case of arthritis in my own family. Dr. Billings looked into the throat and had advised the removal of the tonsils. That was a case in which there had been no evidence of sore throat for twenty years; once in the lifetime of the patient there had been tonsillitis. In the past twenty years there had not been an attack of tonsillitis or sore throat, and yet such a distinguished authority as Dr. Billings advised the removal of the tonsils.

When Dr. Shambaugh was removing the tonsils he remarked to me, "You and I would pay no attention to tonsils of this kind if the patient came into our office," but Dr. Billings ordered the removal of the tonsils and they were removed. In examination of the tonsil, after removal, there was a focus of infection found beneath the small tonsil, which was not as large as a small butterbean. You see, this focus of infection apparently intensified the condition of the tonsil. Perhaps the throat man himself would not pay any attention to it, and the patient would not have thought of going to a throat man because there was no occasion for it.

The nasal and throat conditions that cause these ear conditions are legion. In the nose we have the deflected septum, the nasal spurs, the polyp and so on, all of which means, in a measure, the occlusion of nasal respiration, and wherever you have an area of hyperemia from any of these pathologic conditions in the nose, occlusion on either side, sometimes the ear is going to be involved as a consequence. The fact is a good many of us have lost a very large degree of hearing power without knowing it. We have a superfluous amount of hearing power, with a minimum loss of from thirty to forty per cent. without being conscious of it, and we only find it out by an accurate test with the tuning fork.

As to the question of removing tonsils, I believe the day of the tonsillotome has past, and I believe that if a tonsil needs to be operated at all, it needs to be absolutely enucleated. I am frequently embarrassed by a patient coming to my office, on whom I operated ten or more years ago, with a bad tonsillitis. The surface of the tonsil has very little to do with infection or even with tonsillitis. The trouble is in the base, and unless you get that out absolutely and completely, there is apt to be a recurrence.

In my own town recently there was a case—it was not my own case, but I am criticising no one—that fell into the hands of another specialist, who looked into the throat and said, "You have a case of tonsillitis." The patient replied, "I just had my tonsils removed," but there was a piece of tonsil in the throat not as large as a split pea, and he insisted on removing the tonsil. The patient refused at first, made light of it, but this case shows how these little things can produce trouble, but finally that piece was excised, which was not larger than a navy bean, I am sure, and the symptoms instantly disappeared. The recent instrument for the removal of tonsils, the Becks tonsilectome, or the Sluder method, makes it a comparatively easy operation, and there is no excuse in the world for leaving any portion of the tonsil with the use of either one of these instruments.

Adolph O. Pfingst, Louisville: As I did not arrive in time to hear the papers of Drs. Cohn and Reynolds, I do not know what particular points were brought out. Speaking to the question as to

what the practitioner ought to know about the ear, as far as diagnosis is concerned, I would say that middle ear troubles often run their course without producing local symptoms and that this is one of the important facts that a practitioner should be familiar with.

It is not an uncommon experience to have patients with symptoms simulating typhoid or other conditions, and treated for such, in which the symptoms were due to inflammation in the middle ear. I have seen cases of that kind treated for typhoid fever for a week or ten days and finally developed symptoms which called attention to an existing ear trouble. In cases with irregular temperature and nothing definite upon which to base a diagnosis, we should examine the ear whether we have symptoms or not.

While we are usually able to recognize impending abscesses of the ear by inspecting the drums at times the condition may be overlooked even after examination of the drum, as the serum or pus may accumulate in the tympanum in young children without changing the appearance of the drum. I recall a case of this kind in which I was called to see a child on account of a slight earache with some rise in temperature where the drum appeared practically normal, and I assured the family that there was nothing wrong with the ear, or at least I saw no indication for surgical interference. During the night the ear began discharging. Similar experiences have been reported by other otologists although it is rather an exceptional occurrence. As a rule there is redness and frequently bulging of the drum to denote an accumulation of serum or pus in the tympanum.

As to the throat condition, I am probably a little ultra conservative regarding the indication for removing tonsils, but there is the danger of going too far in our enthusiasm regarding the relation between the tonsil and constitutional ailments. I do not mean to say that I do not remove tonsils for constitutional conditions for my record cards will show quite a number of rheumatics who have been relieved by a complete removal of the tonsils. However I do not believe that every fellow because he has an occasional pain down his neck, his back or his joints ought to have his tonsils removed. We should above all be conservative in our decision, keeping in mind the fact that we are suggesting an operation which has its dangers and which is followed by considerable discomfort. I am sure that Dr. McClure did not mean what he said when he told us that the tonsil operation is a simple procedure. It is of course not the most difficult operation in surgery but in the hands of the inexperienced may lead to considerable disfigurements of the faucial pillars. I still look upon the tonsil operation as major surgery. It is very much a major operation as far as the after effects are concerned. These patients all suffer considerably with pain especially on deglutition

for 4 to 6 days. For a while the idea seemed to prevail that all rheumatic pains were attributed to the tonsils without having any other thought of other foci of pus, such as the teeth, etc. Now many of the patients are consulting the dentists to determine the condition of their teeth and many obscure cases of rheumatism are relieved by the eradication of pus foci around the tooth roots.

With the increasing knowledge regarding the etiology of rheumatism, we do not jump at conclusions and remove tonsils before eliminating the teeth and accessory sinuses as causative factors. We do see cases, of course, where rheumatism is attributable to the tonsils. I have even been called upon to remove the tonsils during an acute attack in order to cut off the source of infection as rapidly as possible.

While I have seen cases in which I am convinced that the tonsil operation has relieved rheumatism I have not watched any of the cases long enough to come to a definite conclusion regarding the permanency of the cure in these cases.

Just a word more about the appearance of the tonsil and whether the specialist can make a diagnosis as to the relation between effect and cause. I do not believe that we can do it. Occasionally we see ragged tonsils with the crypts filled with cheesy masses, or when the individual gags you can see a thin membrane covering a pocket of pus. It is almost a foregone conclusion in such a case that the tonsils are causing the systemic derangement, but in the average case, where the foci of pus are deep and not visible, it is practically impossible to establish a relation between the tonsil and rheumatism.

Frequently after the removal of these apparently unaffected tonsils they will be found to contain inspissated masses of pus in one or several places. I make this point especially for the reason that we must not be too positive in making a diagnosis that the tonsils are at fault.

If the possibility of other foci of infection can be eliminated and the patient is afflicted with rheumatic pains and swollen joints and especially if there is a history of recurrent throat inflammation, the tonsil operation should be undertaken even though no foci of pus are demonstrable.

J. W. Crenshaw, Cadiz: Dr. McClure has told us that the removal of the tonsil is a simple operation, while Dr. Pfingst says it is a major operation. How are we to decide when these two specialists disagree?

W. B. McClure: May I ask the doctor if appendicitis is not a major operation and simple? Major operations may be simple.

J. W. Crenshaw: I will ask Dr. Pfingst to reply to that question. But the general practitioner wants to know what to do for a diseased tonsil. Those of us from the country cannot send all cases of diseased tonsils to the specialist. We must do something for them. We can easily take

the tonsillotome and remove the tonsil that is diseased and give the patient relief, but the specialist comes along and says, "you ought not to leave a piece of tonsil as big as a bean behind," (quoting from the remarks of Dr. McClure). We have a lot of patients in the country who are not able to go away from home, and we as general practitioners would like to have these gentlemen come in and with the tonsillotome show us how to do these operations. If we can't do it, they must do it for us. It is very essential for us to know what to do with the case that comes under our observation. We are here to learn and we are dependent upon these gentlemen to teach us. We want to know what the general practitioner can do with the diseased tonsil and how to do it.

J. A. Stucky, Lexington: There is little to add to the very practical paper presented by Dr. Cohn. One thing the general practitioner should bear in mind is that every aching ear does not necessarily mean an inflamed drum membrane, but every ear that aches and the drum membrane is red and bulging should be promptly incised. By this I mean a myringotomy and not a paracentesis or puncture. The patient may have well developed mastoiditis without any involvement of the drum membrane or middle ear. These cases fortunately are rare. A constant pain of a boring nature, deep in the middle ear with little or no temperature, but pain radiating through the mastoid occiput and temporal regions with evidence of sepsis would lead you to suspect the mastoid as being the focus of infection. Frequently the general practitioner must diagnose ear diseases by exclusion—with the aid of the bacteriologist to tell them the condition of the blood and the character of the infection if there be a discharge from the ear, and the X-ray man, in addition to what we see through the otoscope and the evidence given by deep pressure over the mastoid should enable the general practitioner to decide when to call in the otologist. The general practitioner should not countenance the use of sweet oil and laudanum in the ear or moist heat in any form, nor should he use the ice bag or ice coil and run the risk of cold-storing pus in the mastoid cells or antrum. If any doubt exists an exploratory incision is the safest thing to do. Unfortunately we are still meeting with cases of mastoiditis that have been allowed to run on until the pus has burst through the cortex giving them all the classical symptoms of its destruction.

I would suggest to the general practitioner to discontinue the use of the atomizer in treating the nose. The way the atomizer is used by the average practitioner or patient is like trying to clean house by sprinkling the front porch; only a small quantity of the medicated solution goes beyond the vestibule of the nose. The average case of nasal disease that calls upon the general practitioner, the trouble is in the ethmoid cells or middle meatus which is the attic of the nose and

this can only be treated safely by one who can expertly use the head mirror and speculum and make such topical applications to the diseased area as are indicated. The average case of acute nasal and sinus disease can best be treated by systemic remedies; a brisk cathartic, diaphoretic and sedative will usually be all that is needed to give relief.

I am fully in accord with the essayist in what he says about the tonsil operation. A tonsilleotomy should not be regarded as a minor surgical procedure, but one that should be performed in the hospital with the most careful surgical technique and the patient kept quiet for 24 to 48 hours. Undoubtedly in many instances the tonsil operation is being overdone; many operators remove more than the tonsil, the result being a cicatrized and mutilated throat. I have seen cases that have been so radically operated upon, leaving so much cicatricial tissue, that it gave the appearance of a leutic scar.

I am fully in accord with what Dr. Pfingst has said about the tonsil. I live in a college town. Dr. McClure and I see more young ladies and young gentlemen who are referred to us by the elocution and the music teacher than the average laryngologist. We are asked the question, "What is the matter with this girl's voice, she cannot place the high tone?" What is the matter with this boy's voice; it is husky?" It may be that his tonsils are at fault. You look into the throat and you see a whole lot of cicatricial tissue, and if you did not know to the contrary, you would wonder if that could possibly be of a leutic nature. Somebody has been not conservatively radical but entirely too radical, and in attempting to get rid of all of the tonsil got hold of a part of the anterior and posterior pillar, the tonsil included and left exposed the aponeurosis of the muscle, and now you have a mutilated throat, a throat with acoustic properties impaired. The soft palate does not move easily up and down.

I regard tonsilleotomy as a major operation. When it comes to the removal of submerged tonsils, I would rather do a mastoid operation than assume the responsibility of a tonsilleotomy. I contend, as I pointed out at a meeting of the American Medical Association, when it met at Chicago some years ago, that the important part of the tonsil operation is freeing the anterior pillar and cleaning out the supra-tonsillar space. Any general practitioner can do that; he can free the anterior pillar and keep the supra-tonsillar fossa clean. The infection takes place not in the tonsil itself, not in the crypts that Dr. Pfingst spoke about, but through the lymphatics in the anterior pillar, and if the tonsil is glued to the anterior pillar, every time the patient swallows the tonsil, every move and increased irritation is the result; you will get absorption through the superficial lymphatics involved.

The President: This is a very broad subject,

and among other things the question of diphtheria has come up. In this connection I am going to call on a trained nurse who is in this audience, who has had a good deal of experience with diphtheritic children in school work, a field worker for the State Tuberculosis Association—Miss Hunt.

Miss Hunt: I do not feel like entering into a discussion on the merits of these papers, but I would like to say, that I wish every general practitioner in the State would take more interest in the running ears, defective vision, sore eyes, and bad throats of children, and I wish they would see to it that Kentucky have a fund, in order that we might go into the mountains where the children are twenty and thirty miles from a doctor of any kind, and use that fund for bringing these children into cities where there are hospitals and having them treated.

I have been working with the State University Extension Board, and they send their students in the Agricultural Department and Engineering Department into the mountains and into the rural districts, where they can get practical demonstrations in agricultural fields and in mining engineering. I wish it were possible for the University of Louisville, in which I am particularly interested because it was from that University that most of our lecturers of the hospital came when I was a nurse, to send each summer some students and one or two specialists in the eye, ear, nose and throat and let them go over the mountains and give treatment to the sore eyed children, to do tonsilleotomies, and so on.

I was impressed up in the mountains this summer. We have some funny laws in Kentucky, and if you are ever lonesome take the statute books and study some of these laws, you will enjoy a good laugh. In Kentucky a man has to have a license to be a plumber; you have to have a license to drive an automobile; you have to have a license to do almost everything else, but you do not have to have a license to go through the State and put spectacles on people. That is the funny thing about it. Up in the mountains I remember seeing in Knox County this year a man who called himself a spectacle drummer. He came through there with a great many pairs of spectacles which he doubtless bought at ten cents per pair, and retailed them to the mountaineers at fifty cents, and if they could not pay fifty cents, he felt sorry for them and sold them for ten cents. This man went through the county putting glasses on little children that were suitable for women and men sixty years of age. There was where I felt the need of the cooperative spirit with the University of Louisville and its professors in treating the sore-eyed children and children that needed other attention.

When we began this work of the State Tuberculosis Association I thought I was going to confine myself to the tuberculosis movement. I was not in the field more than three days before I

changed my mind and began to do everything from lecturing on tuberculosis to rendering first-aid to the injured. I was interested in both of them. I went into one home in the mountains where the mother was baking biscuits and hot cakes for the husband in the morning. I stayed with them for a time and said, "You cut out the hot cakes and let us feed him toast." In this connection I am reminded of an offer which was made by a magazine some time ago. This magazine said they would give \$5,000 to the woman who would give the best answer to the question, "How to retain her husband's love?" Some of the women wrote long essays about it, and one good, sensible woman, wrote back, "Feed the brute." (Laughter.) It is my belief that not until we can get the wives of Kentucky to feed their husbands, who are members of the legislature, will we get much of a change. (Laughter.)

I have gone up into the mountains and have traveled from one end of the State to the other. I have enjoyed going into the different counties and appearing before county medical societies, and I want to say that you have some live wires in your county medical societies in Kentucky. When I heard the report read from a councilor from one of the districts I felt like throwing up my hands and exclaiming hurrah! and tying a blue ribbon on that doctor. Over in Harrison county they have a live wire. The doctors are all good looking. All of them are clean shaven, good, attractive men. It does one good sometimes to go around the country and to look at some of these doctors' offices. Some of them are not as clean as they might be. Others again are very clean, the doctors have a smile for you and show a co-operative spirit. I went from one place to another calling on them and telling them how much they could do by cooperating with us. I told them what I wanted to do, and they said I would not have a bit of trouble in doing it. I wanted them to use their influence with the Fiscal Court to get an appropriation for a nurse in that county. That was the only county in the State concerning which I decided to call on every doctor in the county. I never heard an unkind criticism from one doctor about another. If you go over Harrison county you will not hear one doctor saying unkind things about another doctor. If there is any adverse criticism, it will come from some other source. I wish we could get a cooperative feeling like that all over Kentucky because we need it. I believe that the majority of the best thinking people of Kentucky will have more respect for the medical profession when you quit fighting among yourselves, and when you get up before the public and tell them a thing they will believe you. When you advocate public health laws they will have confidence in you.

In connection with the work of the Tuberculosis Commission we had to do educational work in the schools. I remember giving health talks and of getting some government bulletins with

regard to a certain patent medicine. Each month we got government bulletins and gave talks on what that medicine was made of and what it was good for. All of these health talks were given in the schools. I find the work very interesting, but all the time I see the need of hearty cooperation on the part of the medical profession. The doctors and nurses can do a great deal. I believe this is the accepted time. It is the hour of salvation. I see my vision before the medical and nursing profession, I see a great wave of public sentiment sweeping over Kentucky for better health laws. This great wave is sweeping over Kentucky, and everywhere the people are demanding better health conditions, and we want the hearty cooperation of every doctor in Kentucky for better health laws. It is very necessary to keep on lecturing in school houses and in trying to get the Fiscal Courts educated to appropriate money for these purposes, for I believe that a full-time health officer is as necessary in a community as a circuit judge. (Applause.)

Lillian H. South, Bowling Green: In regard to the question of what shall we do with the diseased tonsil, the more we know about a subject the more conservative we become, and I think that accounts for the attitude so many specialists are taking, whether we shall remove the tonsil or not. I think the tonsil is one of the most dangerous organs we have in the whole anatomy, and I think it is the duty of every practitioner, when he goes into a family, it matters not whom he goes to see, to look at the children, to look at the members of the family, and see if they have diseased tonsils or enlarged adenoids, or if the teeth are in good condition. That is a duty you owe to your clientele, whether you are called upon for that one thing or not.

The tonsil causes a great many insidious diseases. We have found in this recent epidemic of poliomyelitis in New York they have recovered the virus of this disease from the tonsils of children. You all doubtless know that the lamented Dr. Murphy lost his life from an infected tonsil, and while it is considered a major operation, it is not a difficult one, and I think that every tonsil that has any secretion or any pus in it should be removed.

I was nearly thirty years of age before I had an attack of tonsilitis, and following that attack I had slight pains in my hands, probably once or twice a year, and I had my tonsils removed. The principal inconvenience I suffered was that I could not talk for a week, and that was quite a handicap.

In regard to the Schick test, this is of great importance in schools and institutions or in families. They found that there are individuals who have a natural immunity against diphtheria, and you can test this out by using the Schick test, which consists of a small amount of diphtheria toxin, which is injected un-

der the skin. If you are immune to diphtheria if you have antitoxin in your system, there will be no reaction against this. If there is no antitoxin in the system, there will be a slight reaction within twenty-four hours. A small, round red area will appear, about the size of a nickel, and in forty-eight hours or later that becomes slightly yellow in its appearance. Any physician can give it because it comes already prepared and will save giving antitoxins as a prophylactic. The State Board of Health keeps a supply and it costs about fifty cents. There is a picture in the article which is wrapped around the syringe showing exactly how to inject it, and a little piece of paper at the end of the needle so that the needle will not go in too far. It is of great value in a family where you do not want to use a large amount of antitoxin.

It is very important, where you have a suspicious case of sore throat, to send in a specimen to us for a diagnosis and find out whether it is diphtheria or not. Since the State Laboratory has been doing this work a great many mild cases of tonsillitis have been found to be diphtheria, and oftentimes the family will not send for a physician at first, and probably several weeks later, when the child has paralysis is the first indication of diphtheria.

I have had recently brought to my attention the fact that two of our best physicians in the State did not recognize diphtheria because it was so mild, and later on had this embarrassing condition to arise. All of this is done free by the State Laboratory, so that there is no excuse for not being prepared. We are anxious to have you send us specimens when you have cases of sore throat of any kind in order to find out whether it is diphtheria or not.

In this recent epidemic of diphtheria we found a great many cases giving the clinical symptoms of diphtheria were streptococcic sore throat. The State Board of Health now handles Squibb's antitoxin, and we recommend that you give a large dose of antitoxin the first time you see a patient. If the case is of twelve hours' duration, give 10,000 units. Usually, if you see the case early enough you do not have to repeat the dose. We have 20,000 units in stock. I recall one case of laryngeal diphtheria in which a doctor used 180,000 units with recovery. We do not recommend 3,000 or 5,000 units of diphtheria antitoxin, but 7,000, 10,000 and 20,000 units.

Arthur T. McCormack, Bowling Green: I agree with the fellow who a few years ago said he did not want to remove anything. (Laughter,) but I believe a false impression is likely to go out from what Drs. Pfingst, Stucky and Reynolds have said about the removal of the tonsils. It is all right to be conservative about the tonsil that has nothing the matter with it, but if you are in doubt about it, if there is an arthritic or an infectious condition, and there is the slightest doubt about the tonsil, even if there is no history of infection,

I believe they should be removed. Be conservative, but be conservative with the patient's life and health and not with the tonsil. Dr. John B. Murphy lost his life because he was advised to be conservative with a tonsil that had not been diseased so far as the surface showed for twenty years, and yet that tonsil, when removed, showed a pocket of pus not as large as a pea, and from that the infection lodged on his heart valves which caused his death.

I saw in consultation work a very short time ago a splendid woman, the mother of a delightful family of children, who had been examined by an excellent specialist, who had advised her to be conservative with the tonsil because she had had nothing the matter for twenty years, and she had a heart lesion, an infectious condition that Rose now speaks of, and after her tonsils were removed a pocket of pus was found in an extremely small, apparently normal tonsil. If there is arthritis present, search for the point of infection. If it is in the gall-bladder, if it is in the appendix or female generative organs, or teeth, find the point of infection. I have no patience with the idea that there are fads in medicine. It is foolish to talk about pulling teeth for everybody who has rheumatism. If a tonsil has been diseased at any time and you can find no other source of infection, remove it. I have seen case after case of infection due to diseased tonsils. I had the opportunity during a visit to Chicago of seeing some of these cases, and I want to give credit to Dr. Billings for correctly diagnosing these conditions. Dr. Heizer had a serious infection while in Chicago and should have had his tonsils removed. I happen to have had an opportunity of seeing a great many of these cases recently. Men like Dr. Billings have complicated cases come to them that have shown some difficulty from an infection of this sort. You and I are seeing hundreds of cases that are being operated and have been operated successfully and wisely. The more experience I have with these cases and in listening to these excellent discussions, the more I am convinced that the thing for us to do when we have conditions in the throat and nose and eyes is to send them to men skilled in those branches of the profession. But we send patients to these specialists and say to them, this woman or that man has conditions for which I want the tonsils removed. We should send such patients to a throat surgeon with instructions to remove the tonsils. Dr. Billings has no more right to ask that for his patients than you and I have for our patients. They know so much about the subject that they are conservative, and we know enough about it to know that the right way is to get rid of these tonsils and suspected tonsils if we can find no other source of infection.

J. A. Stucky, Lexington: I am glad that Dr. McCormack emphasized the points made by Dr. Pfingst and myself that it is often necessary to make a diagnosis by exclusion, there frequently

being more than one focus of infection. Tonsillectomy like appendectomy is a simple operation if you know how to perform it.

H. G. Reynolds, (Closing): I want to agree with the conservatism of Dr. Pfingst and Dr. Stucky in regard to the tonsil. I recently had an experience with two tonsil cases. After I decided in both of them that they did not require removal, they got into the hands of Dr. Billings, who sent them back and had their tonsils taken out.

This by way of illustrating the very point Dr. Stucky, I believe it was, brought out, that is that we frequently look for the tonsil as a source of infection and make ever so thorough an examination of it and cannot make sure that it is the cause of the trouble, yet the internist by exclusion of other foci condemns it and we are compelled to remove them and frequently find pus deep down in the crypt.

As to the Schick test, I believe some one said in discussion that it should be injected under the skin. I wish to correct this, it should be injected into and not under the skin, and the reaction is either negative or positive.

TUBERCULOSIS; ITS RELATION TO LIFE INSURANCE RISKS.*

By W. R. THOMPSON, Mount Sterling.

This discussion does not deal with those applicants for life insurance who are clearly sub-standard but with that large class who are on the border line and from among whom come the great majority of cases of tuberculosis, especially those in the first few years of the policy period.

By the border line I mean those who are underweight, those who have been associated with the disease and those who come from tubercular families.

This line is so ill-defined and irregular that it is one of the most vexing problems, alike to the medical director and conscientious examiner. To determine whether a given applicant is a "candidate for tuberculosis" or will likely live out the policy period is a fine point.

There is but one course to pursue if there is the slightest suspicion that the disease is present and that is rejection.

It has been asserted more than once, and with excellent reason, that practically every one has tuberculosis at some time in life.

Both the director and examiner aim to be fair to the applicant and protect the company to the fullest, as is their duty.

Notwithstanding all precautions taken it remains a notorious fact that this disease is responsible for a very large per cent. of deaths among insured persons throughout

the world, taking third place among the causes.

It is also a fact that a considerable number of those deaths occur in the first two or three years of insurance.

Tuberculosis is usually a chronic disease, lasting over a period of somewhere from five to seven years and as less than two per cent. would account for the acute causes, it follows that a considerable number of applicants are passed by the examiner and director who are at the time tubercular.

It is estimated that it costs the insurance companies of America fifty million, or more, of dollars a year.

The sharp competition between the companies is responsible no doubt for some of this loss, but the greater part of it can be attributed to other causes, some of which can be eliminated, others greatly improved. Granting that medical directors and examiners are as "prone to err as the sparks are to fly upward" it does seem that with our present day knowledge of this disease and the means at our command for determining its presence, the high mortality, especially in the first few years of insurance, ought and could be cut down very materially.

Great improvement has taken place along this line in the past decade but not such as is in keeping with the advance in medical knowledge.

Insurance companies are fast separating their medical departments entirely from the supervision and influence of the other branches of the business.

They aim also to appoint their examiners from among the very best medical men and free from the suggestion or influence of the agent.

These two reforms where fully carried out have in the past and will in the future greatly aid in cutting down early deaths from tuberculosis, as well as other diseases especially cardiac and renal.

The wide difference in the blanks of the many companies shows that as yet no perfect one has been devised, but if any of them if carefully filled after careful questioning and examination of the applicant it will convey to the medical directors a pen picture from which they can draw a satisfactory conclusion.

Medical directors do not claim to be free from error in passing upon applicants, yet by reason of their training and experience, coupled with an excellent knowledge of diseases and with a mass of figures and tables to guide them, they frequently, as Dr. Chas. L. Greene says, "develop a sixth sense which leads them to suspect under a fair exterior a danger which becomes real upon investigation."

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

To be able to do this every question must be answered in a clean, clear-cut manner from first to last.

Rejection by the Home Office of an applicant passed favorably by the examiner is not always a reflection on the examiner.

Laying all the blame possible on the other fellow, which is but human, it remains that the examiner himself is the one mainly responsible for the large death rate among policyholders from the disease.

Many factors enter into the whole, which, collectively or separately, are responsible for this.

An intimate knowledge of the normal and a thorough knowledge of disease is essential if the many signs and symptoms in both the active and arrested or cured state are to be rightly interpreted.

The proper place for an examination is the physician's office, where everything necessary from tape line to scales is at hand.

Thorough examinations cannot be made in the barn, between the plow handles or in the busy shop or store.

A quiet place must be insisted upon.

The border line applicant should be examined in the afternoon that any rise in temperature may be noted, and it must not be forgotten that frequently the arrested or slightly active case will have a decided subnormal temperature in the morning and such a condition should at once excite suspicion.

The applicant's chest must be stripped if irregularities in formation, respiration and slight departure from the normal in the respiratory sounds or percussion notes are to be detected.

The art and significance of palpation, percussion and auscultation must be fully understood.

Too little attention is paid by the average examiner to the physical signs of tuberculosis which are often obscure, yet of the utmost importance.

The personal history helps to reach a correct conclusion as attacks of pleurisy with or without effusion, prolonged colds or grip with cough, hoarseness, night sweats, loss of weight and appetite are usually tubercular.

Any departure from the average normal weight in the past or recent loss should be ascertained, for it is from these light weights that the majority of tubercular cases come.

Age bears a special relation to the development of tuberculosis in the border line applicant for we know with good personal and family history he is much safer after forty than before.

It is imperative that all information possible bearing on direct infection be secured, for this bears a stronger relation to the expectancy of a risk than possibly any other one

thing except the actual presence of the disease.

Insurance companies are fast realizing the importance of this feature in examinations and most of them have questions in their blanks covering it. It is a fact, however, that most examiners confine their questioning along this line to the immediate family of the applicant when it should extend into every day association and business life.

The theory of direct inheritance of the disease has long since been exploded and the proven cases are too few to influence the subject.

Laying aside for the moment the known fact that the disease is always acquired by infection or contagion, heredity does play an important part so far as life insurance is concerned.

We know that the majority of children born of tubercular parents have a low resisting power to the diseases and though removed far from the source of infection from the beginning, are much more likely to contract the disease than those born of healthy parents and placed under like conditions and surroundings.

It follows that careful inquiry must be made as to cause of death of parents and no vague or uncertain answers recorded, for the director knows how prone individuals are to conceal the fact that tuberculosis is present in their families.

Such answers create a strong suspicion if not a certainty in their minds that this is the cause.

The careful examiner will always bear in mind that tuberculosis is not confined to the lungs and will look for old or present bone, gland, skin or intestinal involvement.

It must not be forgotten that the disease is sometimes present in the fat, robust appearing subject, the so-called "phthisis florida" of the older authorities.

At present any tuberculin test is impracticable but would be of immense help could it be used, and I feel sure at some time in the future will be insisted upon by the insurance companies in doubtful cases.

A rapid, small pulse and a continued low blood pressure for age, not accounted for by excitement or some demonstrable lesion, should be looked upon with suspicion, for it is my observation that these two symptoms persist long after all others in the arrested cases disappear.

To sum up, a careful preparation of the applicant and a more careful examination would cut out hundreds of "candidates" for this disease each year and result in an immense saving to the companies for which we work.

Life insurance examinations is the cleanest, best work that comes to the physician and

when he accepts a commission he pledges himself to do his best.

Slipshod methods and guess work have no place here and are largely responsible for the number of tubercular cases who get insurance.

I do not know that my results are any better or worse than the other fellows, but I do know that I take a far different and more serious view of the subject now than I did ten years ago.

AUTHORITIES CONSULTED AND QUOTED.

Dr. John Hunter, Toronto, Canada.
Dr. Charles L. Greene, St. Paul, Minn.
Dr. Allison Maxwell, Indianapolis, Ind.
Numerous Committee Reports.

THE RELATION OF THE DISCHARGING EAR TO THE INSURANCE RISK.*

By ADOLPH O. PFINGST, Louisville.

The close proximity of the middle ear to vital intracranial structures has placed the suppurative diseases of the tympanic cavity along with appendicitis, organic heart disease, syphilis, etc., as regards their significance to the life insurance applicant. To make the phase of the symposium assigned me comprehensible it will be necessary at least in a cursory way to review the anatomical relations of the middle ear to important intracranial structures.

I would recall especially the proximity of the brain and its coverings to the roof of the tympanum where only a thin plate of bone, the tegmen tympani, separates the brain and the middle ear. This plate in some individuals is so thin that it is incomplete leaving nothing but the meninges separating the brain and the tympanic cavity at the dehiscence. It is not an uncommon experience to find intracranial infection with resulting brain abscess or meningeal inflammations result through an extension from the tympanic cavity by way of the tegmen.

Below the tympanic cavity and also separated from it by only a thin plate of bone is the jugular fossa containing the bulb of the jugular vein. The fossa anomalously sometimes reaches high up so that it practically extends into the tympanic cavity. In such cases the bone between the vein and the tympanic cavity and also between the vein and the external auditory canal has been known to have dehiscences. With such anatomical relations it is not strange that infection with formation of a thrombus in the bulb may occur during purulent middle ear disease.

Posteriorly the tympanum communicates

with the mastoid cells which frequently participate in the purulent inflammations arising in the tympanic cavity. In close proximity and behind the mastoid cells lies the lateral sinus. Infection of this sinus causing thrombosis of the sinus is not an uncommon complication of mastoid disease. Infection around the sinus terminating in perisinous abscess is also not uncommon.

At the anterior extremity the tympanum becomes very narrow and leads to a thin plate of bone beyond which lies the internal carotid artery. This wall is also so thin in some that it contains dehiscences. Numerous cases of pyogenic extension from the tympanic cavity through the carotid have been reported.

The inner wall of the tympanic cavity is also marked by vulnerable points. It contains two windows of communication with the internal ear—the fenestra ovalis and the fenestra rotundum, both of which are covered by a very delicate membrane. Between these two windows the bulging promontory marks the first turn of the cochlea. Above and posterior to the fenestra ovalis the knee of the facial nerve marks the beginning of the downward course of this nerve through the tympanic cavity. It can readily be seen that direct extension to the vestibule may take place through the oval and round windows and that infection could reach the cochlea through necrosis at the promontory. It is also not difficult to see how pressure upon the facial or direct involvement of the nerve could cause paralysis, often times permanent.

It is worthy of note that in addition to the direct extension of disease from the middle ear by the many avenues just mentioned infection of the brain and its membranes may be transmitted through the blood and lymph stream.

While mastoid abscess occurs more frequently as a complication of acute middle ear suppuration it is now generally believed that the more serious or intracranial complications, such as brain abscess, sinus thrombosis and meningitis occur more frequently in chronic cases.

It would be practically impossible to determine in just what proportion of cases of abscessed ears complications arise, as a large percentage of cases of purulent otitis are never seen by the practitioner and of the cases which do seek treatment at the hands of specialists comparatively few are reported.

Hospital records of a number of otologists, including Bezold, Barker and others, show that from 1 1-2 to 2 1-2 per cent of all cases of chronic suppurative otitis media terminate fatally.

If the many cases were taken in account who go unattended until they become seriously affected with meningitis, sinus thrombosis,

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etc., and whose ear condition is in consequence overlooked and those, who, on account of a scant discharge, are ignorant of the presence of ear disease, the percentage of death from suppurative ear disease would undoubtedly run much higher. From the oft-quoted statistics gathered by Koerner we learn that in approximately 60,000 autopsies recorded by three observers in general hospitals death from middle ear suppuration as compared to deaths from all other causes occurred in the ratio of 1 to 200.

Insurance records show a still lower relative death rate. In a paper on the Mortality of Ear Diseases, *Deutsche Medicinische Wochenschrift*, 1907, Max Levy quotes insurance statistics in which only 58 of a total of 46,480 deaths, or 0.12 per cent. die of middle ear suppuration.

Such statistics are somewhat misleading for even in hospital practice the etiologic relation between the ear and the lethal intracranial disease is overlooked in a certain number of cases, while in insurance reports this is still more apt to occur.

While these facts along with the knowledge of the proximity of the middle ear to vital organs would apparently exclude all cases of suppurating ears as desirable life insurance risks, and accounts for the present attitude of most companies towards the chronic discharging ear, there are some forms of middle ear suppuration that seldom lead to intracranial disease and hence should not be considered a determining factor in the longevity of the individual. These are cases of suppurative otitis with a very scant discharge usually without odor, in which the perforation in the drum is central. In such cases the perforation is usually oval or kidney shaped the end of the malleus resting in the concavity of the perforation. These cases often become dry only to become reinfected through the Eustachian tube just as the middle ear cavity after a radical mastoid operation in which the tube was not closed is liable to recurrent secretion.

In order to ascertain the attitude of the life insurance companies toward the applicant with a running ear, I submitted to the medical directors of the old line life insurance companies the following questions:

1. How soon after recovery from an acute middle ear disease would an applicant for life insurance be considered a good risk?

2. Would applicant with history of recurring attacks of acute middle ear abscess be considered an acceptable risk?

3. Would subject who has had suppuration of the ears with destruction of the ear drums but whose ears have been dry for a number of years be considered an acceptable risk?

4. Would applicant with chronic suppura-

tive otitis media ever be considered an acceptable risk?

5. If so what would be the deciding factor or factors?

6. Would a case of cholesteatoma be acceptable under any circumstance?

7. What form of suppurative cases would you consider insurable on a substandard basis, that is with an increased premium or with a special clause?

8. Would a case of incomplete healing (with a discharging fistula) after a simple mastoid operation be an acceptable risk?

9. How soon after a successful radical mastoid operation with dry cavity would applicant be acceptable?

10. Would applicant be acceptable, who after a radical mastoid operation has an incomplete result, in other words, who has a secreting cavity?

11. Do you depend upon your regular examiners for the examination of the ears in these cases, or are such cases passed on by experienced aurists?

The attitude of the seventeen medical directors, who of thirty responded to the submitted questions, differ only in minor details. Regarding the time after a single or first attack of acute suppurative otitis (question No. 1) before the applicant would be considered an acceptable risk varied from immediately after the attack to one year, the majority placing the time at from 2 to 3 months. It would seem that the sense of the majority is that: soon as the hole in the drum has closed, the redness left and the individual has been restored to normal general health, the subject would make a safe risk for life insurance.

Regarding the cases with recurrent attacks of acute abscess (question No. 2) nearly all replies were unfavorable to acceptance of this class, however a few believed that cases even after several acute attacks are acceptable after a period of 6 months to 5 years.

Question No. 3, regarding acceptance of cases with destroyed drums but having no secretion, was unanimously answered in the affirmative.

Replying to question No. 4, whether cases with chronic suppurative otorrhoea should ever be accepted was answered "no" in all but two of the seventeen replies. The two favored acceptance of cases with large perforation in the drum with scant odorless discharge and in which there was no tendency for granulation to form.

Question No. 6, relating to cholesteatoma, replies were unanimously "no".

Question No. 7. Most companies do not write substandard insurance. Some few favored acceptance on substandard basis of those cases with no apparent tendency to extension and with central perforation.

Question No. 8, which dealt with the cases of persistent fistula after an acute mastoid operation, were all answered negatively.

Question No. 9. Regarding acceptance after radical mastoid operation were uniformly considered safe risks as soon as healed.

Question No. 10. Relating to moist cavity in an otherwise healed radical mastoid operation was answered "no" in every instance.

Regarding the examination of the cases of chronic otorrhoea by an aurist (question No. 11) the majority stated that their company depends upon the regular examiners. Some depend upon the report of the last specialist whom the applicant has consulted. Only four obtain the opinion of an aurist in these cases.

In estimating the value of a risk showing a specific impairment no fast rules can be laid down as each applicant is necessarily a case unto itself and must be regarded on its own merits. In considering the ear condition the general condition of the applicant must be considered. If otherwise a preferred risk the ear condition would necessarily influence the decision less than in an applicant otherwise a doubtful risk.

From the replies of several of the medical directors we gather that the experience of insurance companies with discharging ears is rather favorable and that cases of otorrhoea have afforded a much lower death rate than was generally expected.

Reference to the Medico-Actuarial Mortality Investigation of 1914, which includes risks recorded in the twenty years previous, also shows that the actual deaths from abscessed ears was considerably less than the expected mortality. The figures were especially surprising in those cases in which an otorrhoea existed at the time of examination. In 52,113 cases of this kind 163 deaths were recorded, while from the former standard 210 were expected making the ratio of actual to expected deaths about 79 per cent. indicating a greater safety of this class of cases than is generally believed. The only cases in which the actual mortality exceeded the expected mortality was in applicants who had 2 or more acute attacks of middle ear abscess, the last within two years of the application.

In these the expected death rate was 39.87 per cent. and the actual death rate 46 per cent. a ratio of 116 per cent. But even with these cases included the mortality of all those having had otorrhoea at any time the number of attacks not specified, was approximately 95 per cent of the present standard, or the expected mortality.

Even after several acute attacks the applicant, although more prone to recurrence than after a single attack, should be given consideration as a risk a year or two after the last attack. However it is in this class of cases that

there is chance to err unless a careful examination of the drums is made. It is not an uncommon experience for otologists after eliciting a history of recurrent attacks of abscessed ears with return to normal between attacks to find upon objective examination, in the ear which the patient had considered healed or dry, a scant amount of pus coming from the drum and indicating the presence of a chronic otorrhoea. The secretion in such cases is sometimes so scant that a diagnosis can only be made by passing a dry cotton probe to the drum.

The acceptance of a risk with a history of several acute abscesses of the ear should be influenced largely by the condition of the nose and throat. With no pathology there the danger of recurrence is necessarily not near as great as in individuals with hypertrophic membranes or polyps in the nose or with enlarged pharyngeal or faucial tonsils.

Otologists also see cases with perforation in the drum in which there is usually no discharge but which through infection from the tube or through the ear canal occasionally discharge slightly for a while only to become dry again. Such cases seldom lead to complications and such conditions should not be a factor against an insurance risk. Even those cases of middle ear discharge where the secretion is scant without odor or subjective symptoms and where the drum has a clean cut central perforation the danger of complications is very slight. In cases of this kind the disease is practically limited to the mucous membrane of the tympanum and the function is usually not perceptibly disturbed. It would seem that an applicant in which such conditions prevail and who is otherwise an unquestionable risk could safely be accepted—perhaps with a somewhat higher premium.

On the other hand cases with perforation nearer the margin, in which bone trouble is more apt to be present, or in Schapnell's membrane denoting attic disease, as well as cases with profuse or very foul pus, those with visible granulations or those with frequent bleeding, denoting granulation behind the drum, and cases with symptoms of labyrinthian involvement or of intracranial pressure such as dizziness, headache, etc., denote danger and would make underisable risks. The same is true of cases with symptoms of pressure on the facial nerve. Cases of cholesteatoma are necessarily always bad risks.

Cases of fistula after spontaneous rupture or after a mastoid operation are, of course, never acceptable risks, as such cases are in constant danger of an acute attack or of some intracranial complication.

Applicants who have been subjected to a radical operation (and the term must be understood and not confused with an extensive

simple operation as it is often done) are safe as soon as the cavity has covered the epithelium—from 3 to 8 months, as danger of mastoid or intracranial complication is even less than in a normal individual. After a radical operation in which, through failure of the tube to close, a certain amount of moisture is found in the otherwise clean cavity there is practically no danger of complication. Such cases are not comparable to those with a persistent fistula after a simple mastoid operation and should be considered acceptable risks.

It would seem to the writer that all cases applying for life insurance presenting a chronic purulent otitis and who are otherwise acceptable should be examined by a competent aurist, for if there is one condition that is almost impossible for men in general practice to interpret properly, it is the diseased middle ear. By subjecting such cases to special examination the insurance company is safeguarded against acceptance of cases that would increase their mortality rate and the applicant otherwise fit would be given every possible chance to secure life insurance protection.

Based upon the low mortality reports in accepted risks suffering with chronic suppurative otitis and especially the low death rate in the last Actuarial Report as compared to former standards, justifies the writer in the conclusions:

That a more definite distinction between discharging ears of a dangerous nature and those apparently harmless would be desirable;

That cases, even in the presence of otorrhoea have merit as insurance risks if in otherwise healthy subjects and in the absence of symptoms such as headache, dizziness, etc., and provided local examination shows the case to be of the non-dangerous type;

That cases which run a benign course should be given the advantage of a careful local examination and that such examination should be made by a competent aurist who is best fitted to interpret conditions of the drum, etc., and to determine the merit of the individual case.

And in conclusion the writer would assume to suggest that the attitude of the insurance companies regarding the acceptance of applicants with chronic ears should be modified so as to further the acceptance of this rather safe class of risks.

DISCUSSION.

W. B. McClure, Lexington: I have only a few words to say. I know of no disease in which there is such grave environments as that of otitis media, and in which there are so few involvements. In my own limited experience as medical director of a life insurance company, I pay very little attention to the ordinary case of otitis media, that is, the cases where the discharge

ceases within a reasonable length of time and the drum membrane has healed. I believe the danger is largely in proportion to the number of attacks, and that this danger increases with each recurrent attack. Of course, in those cases where the discharge proved to be tubercular, the applicant would be noninsurable.

William A. Jenkins, Louisville: The Medical Examiner should always be taught how to make medical examinations. In a good many instances, we can not acquire this knowledge except by experience. The examiner does not know just exactly how to elicit the information that the questions call for on the examination blank.

We are sometimes astonished at the amount of information we can obtain from the applicant, if we ask the question in a proper manner and are sufficiently thorough in the work, no matter whether it is a question of the environment, habit or family history.

Objection is sometimes raised by medical insurance examiners who are physicians in active practice, that the medical director is largely a statistician. They sometimes feel that when he writes back to them for additional information, that it is unnecessary, or on the other hand, that he refuses an applicant whom they have recommended as a first class risk. Sometimes this irritates the local examiner, but when we consider that the medical insurance director has nothing else to go by, except the abstract of the applicant which we send him, we can readily see and appreciate his position.

And again, I have been finding out since doing medical life insurance work for a number of years, that we do not give the medical director credit for a lot of things that are valuable that the average general practitioner would not consider.

In our medical educational institutions, the question of life insurance examinations should be taken up in a series of lectures or clinics, and the student instructed how to elicit proper information from the applicant, and likewise some study on the different methods of making physical examinations. I feel also that the medical insurance director ought to instruct the examiner by booklet or otherwise, as to just what sort of an examination he wishes, whether he wants the chest bared, instruments of precision used, etc.

The local examiner is responsible for allowing a great many imperfect individuals to pass. He has some circumstances, however, to contend with that makes his work very hard. For example, the insurance solicitor is liable to call him at any hour to come at once to examine Mr. So and So. He may be requested to make this examination in a busy office where people are constantly coming and going, and where there is the click of a half dozen typewriters in the same room, or he may find his man in the very midst of his humming machinery and be expected to make the examination there without even a place to rest

his blank, and do his writing. The noise may be such that it is impossible for him to even tell anything about the condition of the applicant's heart. And yet he is sometimes urged to make an examination under these circumstances.

Of course, it requires no argument or explanation to show at once the fallacy of this sort of thing. I have oftentimes said that if the medical director would compel all applicants to go to the office of the physician, that would be the best possible means of securing a good examination. If I can, I always have the applicant come to my office, where there is everything that is liable to be of any benefit in finding out the applicant's physical condition.

Perhaps this is a bit ideal, and I know that we cannot make all examinations under such ideal circumstances, but I do think we ought not to allow ourselves to be cajoled into going to the opposite extreme. We should at least always insist upon the appointment of a suitable time and a suitable place for making the examination, having the solicitor in each case, explain to the applicant that it will require perhaps a little more than one-half hour and it will be necessary to make the examination in a quiet room, where the doctor could bare the chest and make the right sort of examination.

I am sure that there would be a much better understanding between the medical director and the local examiner if they could have some such talk as this regarding the requirements for making the examinations. And I likewise believe, as I said before, that special instructions ought to be given along this line in our medical schools, and finally after making an examination of an applicant, if I am at all in doubt as to the advisability of recommending the man as a first class risk, I always hold this application up and make a special appointment, so that I can look him over again and examine him more thoroughly, before sending in a report to the company.

W. W. Anderson, Newport: Medical life insurance examination is the art of finding out what is wrong with the fellow who is all right or who thinks he is all right or pretends so to think. It is the art of diagnosis without the assistance of the patient, as it were. It would be well if we could have the ideal conditions which have just been mentioned in the able discussion of Dr. Jenkins, but we always have to compromise on that a great deal, for the reason men and women, generally speaking, are not buying insurance. They are stealing it, and if we insist upon ideal conditions for examination, we will get no examination in some instances.

One of the cardinal mistakes we make as examiners is in putting up to the home office a doubt which they cannot solve. If I find a patient or applicant with a pulse a little more rapid than normal, the home office man has no means of determining why that pulse is rapid. If I do not clear up that question, the chances are the risk

will be rejected. The medical director must decide such questions as the family history and occupation, locality, climate, and such things as that, but the individual risk belongs to me if I am the local medical examiner and I must clear up all doubt.

I was very glad Dr. Thompson mentioned the subject of rapid pulse as one of the most important symptoms of latent or early active tuberculosis. In my experience as examiner for many years, and of late years for nine different companies, two of the commonest causes of rapid pulse are tuberculosis and alcoholism. There are other causes, but those are the commonest in my experience. Low blood pressure is highly significant and requires further examination or rejection.

The point of resistance of children of tuberculous parents, and the suggestion of some persons that they have more resistance to tuberculosis than the children of the non-tuberculous, seems to me to be clearly nonsensical. The child of a tuberculous parent has, in all probability, more resistance to tuberculosis than the parent, but of course not necessarily more than the child of the nontuberculous. If tuberculosis is general in a race for a number of generations, the survival of the fittest will give us a race that will fight off tuberculosis, but we have not arrived there yet.

One point on the early diagnosis of tuberculosis was not made quite clear. The essayist spoke of palpation but did not emphasize it sufficiently. I think one of the very earliest symptoms is muscle tension over the region of the tuberculous chest, just as we have muscle tension over the appendix when it is sore, and just exactly in the same way we will find muscle tension over the apex when there is tuberculosis starting up beneath. But it is harder to determine because the muscles are solid tissue, with the ribs just beneath. By continued light palpation and practice and study you become expert, you will be able to determine tension in the intercostal muscles and in the sterno-cleido-mastoid and pectoralis and minor muscles much more readily.

J. A. Stucky, Lexington: In considering the question of life insurance risks, if the applicant has a chronic suppuration of the ear with undoubted involvement of the aditus ad antrum with caries of the ossicles, covered by granulations and pus, this case is undoubtedly a bad risk unless relieved by a radical mastoid operation.

The general practitioner must not forget the great difference between a chronic discharge of pus from the ear and one of mucus and pus. A muco-purulent or catarrhal disease of the middle ear is quite different from chronic discharge of foul pus.

The question with the average physician in the country, who is an examiner for the insurance

companies and the applicant gives a history of a chronic discharge from the ear, how is he to decide whether to accept or reject this risk, there being no other trouble but that of the ear.

Unless one has had some experience and training in the use of the mirror and ear speculum it would be better for the company and the examiner to refer the case to an otologist, but if one has had both experience and training in the use of the mirror and speculum and can accurately use the microscope and make the functional tests, he could decide whether the case was one in which he would be safe in giving a positive opinion or whether it best be referred to an otologist. If there be a perforation in Schrapnell's membrane and there is a discharge of foul pus and the microscope shows little or no mucus in the discharge, this case should be regarded as an unsafe risk until relieved of this condition—especially is this true if there is an increased leukocytosis.

The average examiner for life insurance companies is usually in close touch with the otologist, bacteriologist and roentgenologist with whose help he can say positively to the insurance companies whether the risk be a safe one.

B. J. O'Connor, Louisville: There are one or two points I would like to speak of, one of which is in connection with the topic presented by Dr. Pfingst, the possibility of metastatic process originating from the ear. I think every other phase of the subject has been covered, but there are no doubt numerous attacks of rheumatic and nephritic infections which owe their origin to otitic foci.

One of the most important points I think under the head of the tuberculous infections of the lung, in their detection, is the fact that the medical examiner so frequently overlooks putting down the actual facts of his examination. Let us take the pulse rate. He will count it and find that it is 96, possibly 100, and say, "Well, this applicant is nervous; I know this man will not be accepted with a pulse rate over 90; I will put the pulse down at 80." That is a mistake. The examiner overlooks the trivial things the applicant tells him. He may have some slight indigestion, he may be run down a little, and we do not place enough importance on these things and examine the applicant thoroughly enough to eliminate possible serious underlying diseases. By all means the insurance company is entitled to the truth in every case. If you cannot explain it, if the pulse rate is over 90 and persistently so, the insurance company will not take that man. That man should be held up until the possibility of tuberculosis or other disease is thoroughly eliminated.

One more point I desire to mention is the hereditary feature. I believe I understand the essayist or one of the speakers to rather minimize the importance of parental tuberculosis. I do not know of any one more frequent source of

tuberculosis, that is, during the childhood period. If the children you examine have had a parent die when they were infants, the danger is a great deal more there than if they were exposed to ten or twenty tubercular people in business. I think every man who has had considerable experience can tell you in tracing the family history in a large percentage of cases that there was a history of parental infection when the patient was an infant or a child.

Henry Enos Tuley, Louisville: One might think Dr. Thompson had presented a brief for the medical director. I do not know of a paper that I have heard recently that puts up to the medical examiner the importance of his function to the medical director more clearly than this does. The medical director looks at the applicant through a medical examiner's eyes, and the thoroughness with which this examination is made, the family history taken, and physical examination made, will depend the records of that company. It is surprising to notice that the early mortality in tuberculosis among insurance risks occur during the younger policy holders. A large number of cases that die are among the policy holders that have had their policies only two or three years. This ought not to be the case. Dr. Jenkins has pointed out very clearly that these examinations are very frequently made under surroundings in which a careful examination is impossible, and the medical director looks to the examiner for careful and painstaking work, and we expect that this kind of service will be rendered. The young doctor of to-day has a great advantage over the graduates of a number of years ago, because their instruction upon life insurance examinations is made as practical as possible. My predecessor in the University of Louisville, Dr. W. E. Grant, a medical director of long standing, realizing the importance of this work, had instituted in the university a number of years ago a course upon medical life insurance, so that the student has ten or fifteen hours in medical life insurance instruction.

Another thing which we think of great importance in the practical work of students, which increases their ability as medical insurance examiners is the course we give them in tuberculosis. We in the university see to it that these men have a morning a week for three weeks at the Tuberculosis Hospital, at Waverly Hill, and those students spend the entire morning there with cases of tuberculosis which we know are there in all stages. The advantage of this to the men, especially in their work in insurance, is incalculable.

Mention has been made about the statistics which the medical director gauges cases by. It is very important, and the medical examiner ought not to feel badly if a case which seems to him all right is rejected by the medical director, because there are many phases which enter into

the acceptance of that risk which the medical examiner may not be fully cognizant of.

The very latest actuarial figures upon these subjects have been dealt with in the essay, the effect of middle ear disease, and the effect of tuberculosis of various kinds. One point has been emphasized by the essayist and the various speakers in regard to a suppurative middle ear, that after two or more attacks lasting two years the ratio of actual expected deaths was 16; that many more deaths occur in these cases than were expected.

With your permission, I would like to give some statistics I have here so that they can be incorporated as a part of my discussion, because they have a decided bearing on the subject and will add greatly to the interest of the discussion. They are the latest actuarial figures.

Suppurative Middle Ear Diseases, Otorrhea, Discharge from Ear.

This class was confined to the insured who gave a history of the disease within five years of examination. Groups K, A, B, and J, each show a low mortality, and have been combined in the detailed tables.

Group	Act. Dths.	Expe. Dths.	Ratio of Act. to Ex. Dths.
K.—Found on examination...	21	26.70	79 p. c.
A.—One attack within 2 years of application.....	62	86.82	71 p. c.
B.—One attack between 2 and 5 years prior to application	55	67.08	82 p. c.
J.—An attack at an indefinite time in the.. past	25	29.75	84 p. c.
E.—Two or more attacks, the last within 2 years of application	46	35.59	116 p. c.

In the specialized mortality investigation the mortality of those having had otorrhea at any time, number of attacks not specified, was approximately 95 per cent. of the present standard.

Tuberculosis of the Lungs, With or Without Blood Spitting.

There were 285 cases, with 11 deaths, in this class, and the groups were too small to be of value.

Blood Spitting, Without a Distinct History of Tuberculosis of the Lungs.

The following groups were omitted from the investigation:

E. F. G.—Two or more attacks within ten years of application, 152 cases. 10 deaths.

J.—An attack at an indefinite time in the past, 293 cases, 15 deaths.

Groups A and B have been combined as the data therein were few. There was practically no difference in mortality between Groups D and H,

and these also have been combined. The following is a synopsis:

A, B.—One attack within 5 years of application....	46	30.41	151 p. c.
C.—One attack between 5 and 10 years prior to application	63	48.16	131 p. c.
D, H.—One or more attacks, the last more than 10 years prior to application	223	219.50	102 p. c.

The deaths from tuberculosis of the lungs in Groups A and B were fully five times the normal in Group C about three times, and in Groups D and H nearly twice the normal.

The foregoing results are consistent, but it is not likely that a group, the members of which had one or more attacks of blood spitting at least ten years prior to application, would normally show the same mortality as a group of the same ages but free from this impairment. To secure such a result the former must have been much more carefully selected. There are indications that the mortality is relatively much higher at the younger than at the older ages at entry.

In connection with this class it may be mentioned that investigation was made in 1913 by Messrs. Elderton and Perry into the mortality among patients of an Adirondack sanatorium for consumptives. There were about 3,000 cases under observation, covering the period from 1885 to 1911. The mortality after date of discharge from the sanatorium of those apparently cured was about twice the normal, as measured by the mortality rates of the English population.

Tuberculosis of Glands, Including Scrofulous Glands of Neck.

Apart from Groups A, B, C, and D, there were only 113 cases, with 7 deaths. As the amount of data was small in Groups A, B, C, and D, the details are not given, the following synopsis supplying all that is of value:

A, B, C.—One attack within 10 years of application	216	16	8.83	178 p. c.
D.—One attack more than 10 years prior to application	370	25	22.21	113 p. c.

The death-rate from tuberculosis of all kinds was not higher than the normal.

Tuberculosis of Bone (Hip, Spine, and Other Joints).

As the data were few, Groups A, B, C, and J were combined. The following is a synopsis of the results:

A, B, C, J.—One attack within 10 years of application or at an indefinite time in the past..	44	23.14	190 p. c.
D.—One attack more than 10 years prior to application	90	75.17	120 p. c.

Among these 134 deaths, tuberculosis of the lungs appears in normal proportions, but the death rate from other varieties of tuberculosis is decidedly higher than the normal, accounting for 8 per cent. of the total deaths.

J. W. Kincaid, Catlettsburg: Just a word or two on tuberculosis and its relation to life insurance. It is a very important subject to all of the policy holders as well as to the company because by economy of management insurance is cheapened, and a lessened death-rate means larger dividends.

If we are going to find out when a man has tuberculosis we want to find it out in the earlier stage, and we know that two of the first symptoms we have is a high pulse rate, or a faster pulse, and loss of weight. The actual rate is supposed to be given; likewise the actual weight is supposed to be given. Oftentimes, as it has been suggested here, the one is mistated and the other is guessed at. How are we going to overcome that? If the medical directors would help to make an inflexible and inviolable rule that every examination, in the first place, must be made in a quiet place, these examinations would be more thorough and reliable. But the chief thing is the blank must go directly to them, not through the hands of the agent, not even through the office of the state agent, but let the blank go absolutely to the medical director. Doctors are human. They think that perhaps this man or that man is nervous, and if the pulse rate is too high they make allowances for it, and perhaps attribute it to the nature of his business. and take the applicant's statement as to what his weight is.

If the agent has a considerable number of applicants that are turned down, he is going to register a kick on the examiner and will try to get another one. An applicant may have an idea that he is tuberculous, when he knows he has been losing weight. He may have simply taken up this idea himself or the doctor has told him so, and right then he wants insurance, and the insurance companies find why there are so many deaths from tuberculosis occurring within the first two years of the issuance of the life insurance policy.

The companies pay a good fee for their examinations and are entitled to accurate answers to all questions when it is possible to give them, and if there is to be no review of the examination by the agent, they will be much more able to get them.

According to Kinloch (British Med. Journal, June 3, 1916) naphthalene, creosote and iodoform powder are most destructive to lice, but the insecticidal action of the first two drugs is much more powerful than that of the iodoform. Commercial naphthalene is more actively insecticidal than pure naphthalene but the insecticidal powder of naphthalene-creosote powders gradually diminishes when exposed to the open air.

RATIONAL MANAGEMENT OF TYPHOID FEVER.*

By S. W. CROWE, Centertown.

Rational management of typhoid fever means a great deal, not only to the physician in charge and to the patient, but to the family and friends as well. In the limited time which has been allotted to me to discuss this subject. I shall not be able to enter into the minutest details, but hope to give you some general ideas of what I consider to be a reasonable, sensible way of managing these cases.

It is interesting to note that the medical profession has been battling with this disease, probably, ever since the dawn of civilization, as it is easily recognizable in the descriptions of Hippocrates (B. C. 460-357), Galen (A. D. 130-200); and in more modern times in those of Adrianus Spigelius (1624), Thomas Willis (1659), N. Hoffman (1699), Thomas Sydenham (1685), and others in the seventeenth century and the next. Doubtless, Huxham's "slow nervous fever" (1739), described in his "Essays on Fevers" was the typhoid of the present day. In fact the more you study this subject, the more inexhaustible it seems to be.

For convenience, I have treated this subject under the following divisions, viz: 1. Prophylaxis; 2, general management; 3, medicinal treatment; 4, hydrotherapy; 5, special symptoms; 6, convalescence.

Prophylaxis. The important measures for the prevention of typhoid are:

1. The isolation of the patient and thorough disinfection of the excreta.
2. Careful inspection of the drinking-water, as well as the source of supply and the means by which it is conveyed.
3. Careful inspection of the food, especially of the milk.
4. Cleanliness of the surface, the removal of garbage and other impurities, and the prevention of the saturation of the soil by sewage.
5. Vaccination.

(1). The isolation of the patient is necessary for many reasons. The attendant upon a typhoid case may convey the bacilli directly by handling food or drink which is given to healthy members of the household. If care is not taken the excreta may become dried and the germs may be scattered about in the dust or a few of them may light on meat or milk and there multiply indefinitely. Dried bacilli may be inhaled and swallowed, or possibly they may be inhaled into the lungs and there multiply.

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

The sick room should be well ventilated and absolutely clean. The patient should be sponged regularly and all soiled clothing at once removed. The nurse should cleanse her hands with a mild disinfectant solution whenever they are soiled.

Disinfection of the discharges should be very thoroughly made, and in small towns and country places they should not be thrown into the ordinary privy or cess-pools, but should be buried.

The urine should be treated the same way as it frequently contains bacilli. For disinfection of the urine in the bladder and urinary system, Gwyn recommends urotropin as the only substance which can claim any direct action when administered by the mouth. As irrigations, bichloride solution 1 to 100,000 or 50,000 have been very successful, removing the bacilli with much more certainty than any other method. The urine of typhoid patients should always be disinfected. Feces, of course, should be disinfected at all stages of the disease, but the organisms being present generally only from the beginning of the second week to the fall of the fever, and the patient during this period usually being confined to bed, the feces are not such a source of infection to the community at large as the urine. In the disinfection of the excreta, chlorinated lime as good as any and less expensive, in a strength of four ounces to the gallon, thoroughly mixed and allowed to stand fifteen or twenty minutes before being thrown away. Corrosive sublimate and permanganate of potash, two drams of each to the gallon of water has the advantage of being odorless but is a strong poison.

(2). Typhoid fever is, no doubt, in the majority of cases, a water-borne disease. This has been proven to a demonstration by the lessened mortality of cities from typhoid after a system of water works has been introduced and pure water obtained. Bacilli have not only been found in the drinking water, but their multiplication especially in that containing sewage has been amply demonstrated. It is probable that a small number of bacilli may be sufficient to produce the disease in an individual predisposed to it.

The multiplication of germs in impure being so much greater than in pure water, shows how necessary it is that apart from the presence of bacilli, the water be free from all contamination. The well in the country places should be situated at a distance from any source of contamination. It should be deep, and protected to prevent the surface water from running in. Boiling and filtering are recommended for impure water. Ice is often the source of typhoid fever, as the bacilli are not destroyed by freezing. It is safer, therefore, to cool water in a refrigerator than to

place ice in it when the source of the latter is not well known.

(3). Several epidemics of typhoid fever have been produced by contaminated milk. In all large cities dairies should be inspected to see that the disease does not exist in the neighborhood; that the utensils are cleaned with pure water, while general cleanliness is insisted upon. If the milk be suspected to contain bacilli, the danger should be removed by boiling. In this country such a condition is rare.

(4). Good drainage is an important factor in the prevention of typhoid fever in cities and towns. There is a direct relationship between the amount of impurity of the soil and the number of cases of typhoid fever. When the streets and lanes are kept free from garbage, manure and other impurities, the liability to typhoid fever is lessened. For years, typhoid fever has been looked upon as a filth disease, and it is still equally true that cleanliness is one of the best measures of prevention.

(5). A. E. Wright has introduced a method of vaccination against typhoid. The material used is a bouillon or agar culture of bacilli heated to 53 to 55 degrees in order to kill them.

Lysol or tricresol is added. For the first inoculation a quantity of the vaccine containing 500 millions of the bacteria is employed, and for the second and third inoculations a quantity containing 1,000 millions bacilli is employed. Three inoculations are given at intervals of ten days. Leishman in a study of recent results in the British army shows that typhoid is nearly six times more prevalent among the unvaccinated than among those vaccinated. In the U. S. army the incidence of the disease has been nearly ten times as great among the unvaccinated. (Russell). The evidence so far points to a persistence of the protective effect for at least two years after inoculation. The value of this procedure has been thoroughly established, and according to Osler all those exposed to infection, especially nurses, should be protected by it. I do not think as yet, that this method has been used to any great extent in the rural districts as a part of the rational treatment of this disease.

General Management. The profession was long in learning that typhoid fever is not a disease to be treated mainly with drugs. Careful nursing and a regulated diet are the essentials in a majority of the cases. It has also been clearly established that rest in the recumbent posture is of the greatest importance. A single bed (for convenience in nursing) with a hair mattress on springs should be selected. A rubber cloth should be placed under the sheet and the covering should be light.

If at home, a room should be chosen which is most separated from the remainder of the house and at the same time convenient for the nurse. In cities a back room is to be preferred on account of street noises. The patient ought to remain in the recumbent posture all the time. A bed pan and urinal should be used. The body should be sponged night and morning, the night dress and sheets changed each day, and soiled clothing removed at once and placed in a disinfectant solution. The excreta should be carefully disinfected.

The patient should be kept as quiet as possible and his wants attended to with regularity and care. Friends, even those of the family, should not as a general rule, be allowed to remain any length of time in the room. He should never be left alone even when there is no delirium, for he may try to arise, and if delirium is present, there is much danger. Patients have been known to destroy themselves by jumping from the window.

Fluids, especially cold water, should be given freely to produce free diuresis and thus rid the system of poison. The temperature should be taken at least night and morning and recorded in a chart. After the subsidence of the fever the sponging should be continued and followed by gentle massage. During convalescence, if the weather permit, the patient should be taken out on a stretcher and allowed to spend many hours in the open air.

Diet. The powers of digestion are much diminished, and it is not only useless, but harmful, to give food which will pass through into the intestine without undergoing the normal changes in the stomach, and may act as a direct irritant on the mucous membrane and at the same time undergo fermentation and decomposition, thus increasing the gas in the intestine and producing poisons which may be taken into the circulation. However, more liberality in diet is now generally practiced, as was advised years ago by Austin Flint and strongly supported by Shattuck, Kinnicutt and others.

Because the powers of digestion are much diminished, even liquid nourishment should be given in limited quantity. Milk is altogether the best food, and should form the principal diet of typhoid patients. Lime-water, barley-water and rice-water are sometimes added to prevent dense curdling in the stomach. Clear soups, jellies, broths and eggs, raw or soft boiled, may also be given. In occasional cases milk is not tolerated by patients, and other forms of nourishment may be substituted for it. Want of tolerance is often a fancy of the patient, and when milk is perseveringly given, dislike to it ceases. Patients are, however, met with now and

again with whom milk does not agree. For such, soups, jellies, barley-water, rice-water, fresh eggs, chicken broth, mutton broth, and coffee with much milk may be given.

The digestive functions seem less affected when the temperature is not high and in mild cases many of these simple foods can be given without danger. The rational plea is simply to treat the patient rather than the disease; to feed him with reference to his digestive powers, rather than solely or mainly with reference to his fever. To give the maximum of food that will sustain the patient, not the maximum amount that he can take.

The return to solid food in the stage of convalescence must be made with care, especially when the attack has been severe. Boiled custards, eggs lightly boiled, eaten with a small piece of thin bread and butter are to be permitted first. Some authors state definitely that solid food should not be given until the temperature has remained normal for a week or ten days. This is doubtless best in some cases. Such rules should not always be adhered to. There are cases in which a moderate rise of temperature may exist for weeks, due largely to weakness, exhaustion, and want of elimination. The administration of solid food in small quantities will often relieve the exhaustion and enable the patient to gain sufficient strength to get out of bed.

Stimulants. Alcohol is given by some in a routine way in all cases. The practice should certainly be condemned. Alcohol like all other drugs, produces different effects on different persons, and it is not known how much digestion and assimilation may be interfered with especially in patients who have been quite unaccustomed to its use. In the mild form of the disease alcohol is unnecessary, patients doing better without it. In severe forms, especially when patients have been in the habit of drinking, also to old and feeble persons, alcohol may be given in moderate quantities, commencing about the middle of the second week after the headache has subsided. When there is prostration this remedy is of positive benefit, when, for instance, the pulse is frequent and feeble and ataxic symptoms are present. Eight to twelve ounces may be given in the twenty-four hours. I am of the opinion that there is too great a tendency to depend upon this agent to the neglect of other means of restoring strength. Ether given subcutaneously will sometimes revive a patient temporarily. Alcohol may be given in the form of brandy or whisky diluted with water or in milk punch. Wines, especially champagne, may be ordered when there is irritability of the stomach. The nitrite of amyl is useful.

Water internally and externally lessens or mitigates the effects of toxemia, to a far

greater degree than any form of treatment thus far employed. The necessity for stimulants is also lessened in a degree by prompt treatment of diarrhoea which contributes to exhaustion.

Medical Treatment. At the present time in addition to the general management already detailed, cases of typhoid fever are, as a rule, treated according to one of four different methods:

1. The expectant method, by which is meant the treating of symptoms as they arise and the guiding of the cases safely through the disease. This plan is to be recommended in mild cases when the temperature does not rise, as a rule, over 102, and when the poison seems to exert little effect on the degeneration of tissues. It has, however, been abundantly proved by statistics that the expectant method is inadequate for the successful treatment of severe forms of the disease, and that the mortality under its use is greater than that under some other modes of treatment.

2. The antiseptic method, is based upon the fact that germs and toxins exist in the intestinal canal which may be taken up into the system and produce some of the serious muscular and nervous symptoms. In the later stages of typhoid fever the bacilli are found in large numbers in the bowel contents and it is probable that in some cases there may be a mixed infection and the colon bacilli may become more virulent than under ordinary circumstances. The antiseptics which have been the most used are bismuth, salicylates, betanaphthol, sulphurous acid, chlorine as recommended by Yeo; salol, boric acid and turpentine.

Many eminent authorities, Osler and Wilson among others, look upon intestinal antiseptics as useless. Wilson states that intestinal antiseptics in so far as new pathogenic organisms are concerned, are directed against germs which do not exist in the bowel prior to the breaking through of the intestinal lymph-vessels, and are therefore largely inoperative. This may be quite true, but in the later stages it would seem rational to render aseptic if possible, the fluids which are in constant contact with the ulcerated surfaces and which contain both germs and toxins. If remedies can be given which do not affect the patient and which change the character of the passages from an ill-smelling liquid to one which has little or no odor, the effect cannot be other than beneficial.

3. Eliminative treatment, which is usually combined with the antiseptic just described, has been advocated by Bouchard of France, and by many on this continent. Thistle, of Toronto, introduced some fifteen or sixteen years ago a form in which purgatives were more freely used than had been previously

advocated, at least in late years. In a more recent paper Thistle makes the statement that the adoption of the eliminative plan of treatment lowers the mortality of typhoid fever to a remarkable degree. It also lessens the severity of symptoms and the duration of the fever.

Whatever may be the theory upon which the eliminative treatment is founded, Sajous, from personal observation is satisfied on two points: That in a number of cases, the temperature falls to normal or nearly so within twenty-four hours after free purgation is induced. Second, that cases at the end of the second or even the third week when the patients are in a low toxic condition as shown by the dry, cracked tongue, sordes; low muttering delirium and meteorism, have experienced decided and favorable change within twenty-four hours after free purgation. And while quite aware that such practice may probably tend to the onset of hemorrhage, yet, he considers the danger from the latter to be less than from the poisoned condition of the system. I believe that much caution needs to be exercised in the above condition.

Hydrotherapy. The cold bath treatment as it is carried out in well appointed hospitals, is probably the best form of treatment known, and if all patients could be treated in this way there would be little use of adopting any of the other known methods. The remarkable small mortality of three out of 99 cases treated in the Johns Hopkins Hospital is an evidence of this. Every practitioner of experience knows, however, that many cases in private practice cannot be treated with cold baths. It is often impossible to induce patients to go to a hospital, and it is therefore necessary to treat them at home even if the surroundings are unfavorable. Then again in country districts this method is in many cases impossible.

When an epidemic spreads over a large section the procurement of baths, nurses, etc., would be quite an impossibility. Some other method of treatment must therefore, be devised and the antiseptic method with moderate elimination has so far been the best.

It is, no doubt, true that the cold bath treatment might be adopted in many private houses where it is not now used if the attending physician was more firm in its advocacy and had more faith in the great benefit of this mode of treatment.

The cold bath treatment of fever was employed by Curry, an English ship-surgeon, in the latter part of the last century, and it was first systematically introduced for the treatment of typhoid by Brandt, 1861. Yet, we find in "Primitive Physic," published more than one hundred years before, (1755) and written by John Wesley, the founder of

Methodism, similar directions for he says: "For the Slow Fever," as it was known in those days, from a description by Huxham, "Use the cold bath for two or three weeks daily." Cullen, in his *Practice of Physic* of 1789, in the *Cure of Continued Fevers*, advocates both the antiseptic and eliminative methods of treatment. He says in his method of treatment that the purpose is, "To obviate or to correct the tendency of the fluids to putrefaction." This may be done, (1) "By avoiding any new application of putrid or putrescent matter. (2) By evacuating the putrid or putrescent matter already present in body. (3). By correcting the putrid or putrescent matter remaining in the body." In other words, as we would say to-day; careful dieting, moderate elimination, and conservative antiseptics. It would seem then that we are to do the same thing, only in a different and more modern and improved way.

Treatment of Special Symptoms. Patients suffering from a mild form of the disease, without complications, do not need any special medication, and care should always be taken that the stomach is not deranged by drugs unnecessarily.

The headache of the first week is best relieved by phenacetin in from 3 to 5 grain doses. Smaller doses are often quite sufficient. Sodium bromide may be given alone or with aromatic spirits of ammonia. The application of the cold water coil or ice-bags to the head have often a good effect. A dose of calomel followed by a saline will sometimes relieve headache.

Insomnia. In the early stages sleeplessness is relieved by the administration of trional or sulphonal. In the latter part of the disease, opium is altogether the best remedy, and may be given in the form of Dover's powders. The other nervous symptoms, coma vigil, subsultus, etc., do not often occur in those cases treated by cold bathing. In the adynamic condition, stimulants are especially necessary and should be given freely. Wilson recommends hypodermics of ether, ten minims repeated once or twice of several hours intervals. Siberian musk is good in nervous depression. Valerian and asafoetida in hysterical delirium. Dryness and coating of tongue and lips may be much relieved by first washing the mouth with a solution of boric acid followed by the use of honey and borax, if there are any abrasions or ulcers. A very mild solution of potassium permanganate is sometimes used as a mouth wash.

Vomiting may be relieved by the application of mustard over the epigastrium, bismuth and oxalate of cerium, diluted hydrochloric acid and cocaine hydrochlorate, have been recommended. Aerated water, champagne and brandy and ice may be given. Attention

should be paid to the quantity and character of food.

Tympanites, when moderate in degree, does not need any special treatment; when excessive the diet should be reduced in quantity if necessary. Turpentine stupes may be applied. Turpentine, salol, and betanaphthol with salicylate of bismuth may be given. The use of a rectal tube will give relief if the gas is in the large intestine. If the meteorism is so great as to be really dangerous to life, rectal injections of a solution of sulphate of magnesium may be given.

Constipation is present in a certain proportion of cases, and, if they are of a mild type, it is probably not harmful. The bowels should be kept free by the administration of salines, castor oil, or olive oil; remedies which do not materially increase the peristaltic action of the bowels. If constipation exists in the second or third week with evidence of severe poisoning; it is probable that the administration of a saline is less dangerous than to allow this condition to continue. It must be stated that men of large experience, Wilson for instance, advise against the administration of laxative drugs after the middle of the second week, and that enemata also is dangerous.

Diarrhoea, unless excessive, does not require any special treatment. It is sometimes the result of local irritation from hard masses, and irritating fluids, and a mild cathartic by expelling these, will cause the diarrhoea to cease. If it still continues opium and lead are the best remedies.

Intestinal Hemorrhage. When symptoms of hemorrhage appear, the patient should be kept quiet, the foot of the bed may be raised to prevent fainting, and blood which is passed through the bowels should be removed with as little disturbance as possible. All stimulants should be forbidden. Nervousness on the part of the patient will excite the heart and thus tend to increase the hemorrhage. An ice-bag may be placed on the right iliac fossa. Opium is the best internal remedy, for, while it lessens peristaltic action of the bowels, it also quiets the patients. Turpentine is thought by some to be especially valuable.

Intestinal antiseptics by reducing tympanites are of use in hemorrhage. Normal salt solution in amounts of from 4 to 6 ounces may be injected into the subcutaneous areolar tissue. The food should be given in small quantities and stimulants avoided. The bowels should be kept quiet for six or eight days.

Perforation. This grave lesion has not been so far treated with much success. A low septic peritonitis usually follows, which is quickly fatal. The usual treatment is complete rest and the administration of opium or

morphine hypodermatically. Ice may be given for the dryness of the throat, and all food should for a time, be withdrawn. If an early diagnosis is made surgical interference is indicated. This procedure is warranted by the success which has so far attended early operative measures. I do not think too much stress can be laid upon the fact that an early diagnosis and an immediate operation is all-important. The operation should be performed as early as possible after the symptoms of shock have passed away. Keen states that the second twelve hours after the accident have been shown by statistics to be the most favorable time, and that if the operation is not done within twenty-four hours after the accident there is practically no hope of recovery.

Epistaxis. As a rule this condition requires no special treatment. The application of ice to the nose or the use of a weak solution of tincture of iron will often be sufficient. It is occasionally necessary to plug the postnares.

The lungs should be examined frequently to ascertain the presence of bronchitis or pneumonia. Hypostatic congestion may, to some extent, be prevented by changing the position of the patient every few hours. The heart should be frequently examined, and if weak, tonics such as strychnine and caffeine may be given. In case of cardiac weakness, care should be taken that the patient does not sit up or make sudden movements in bed.

Management of Convalescence. Convalescence from typhoid fever frequently cause greater anxiety than patients in the attack. The question of food has to be met at once as the patient usually acquires a ravenous appetite and clamors for a fuller diet. Solid food is given by some authors from the time the fever leaves; others not until ten days have elapsed. The proper time to allow solid food would differ very much in different patients; each one being a problem of its own. But it seems to be a safe plan to withhold solid food until about one week after fever has been absent for the entire day. Osler says ten days.

It seems with the many soft foods that may be given the patient can take a fairly varied diet. Many leading practitioners allow solid food to a patient as soon as he desires it. This is not always the safest plan as some of you may have experienced.

It is not easy to say why solid food, particularly meats, should disagree, but in so many instances an indiscretion in diet is followed by slight fever, that it is in the best interest of the patient to restrict the diet for some time after the fever has fallen.

It is doubtful if an error in diet may cause relapse. The patient may be allowed to sit up for a short time about the end of the first week of convalescence, and the period may be

prolonged with a gradual return of strength. He should move about slowly and when the weather is favorable, should be in the open air as much as possible. He should be guarded at this period against all unnecessary excitement. Emotional disturbance very frequently is the cause of recrudescence of the fever.

Constipation is not uncommon in convalescence and is best treated by enemata. Protracted diarrhoea which is usually due to ulceration in the colon may retard recovery. In such cases the diet should be restricted to milk and the patient confined to bed; large doses of bismuth and astringent injections will prove useful. The treatment of the relapse is essentially that of the original attack.

Post-typhoid insanity, a condition which to my great pleasure I have not experienced in my practice as yet, requires the judicious care of an expert. The cases usually recover. The swollen leg after phlebitis is a source of great worry. A bandage or a well-fitting elastic stocking should be worn during the day. The outlook depends upon the establishment of complete collateral circulation. There is permanent disability in a great many cases says Osler.

The post-typhoid neuritis, a cause of much alarm and distress, usually gets well, though, it may take months or even years, before paralysis disappears. After subsidence of the acute symptoms, systemic massage of the paralyzed and atrophic muscles is the most satisfactory treatment.

Dr. Osler, in his latest edition on Practice of Medicine, (1916) says: "Numerous attempts have been made to obtain specific sera, which have been of two varieties; bactericidal and antitoxic. Although strong claims have been made as to the good results obtained by the use of various serums, these have not been generally accepted, and thus far no serum of definitely proved value has been obtained. The use of vaccines as a therapeutic measure has not been proved to be of value."

DISCUSSION.

W. R. Moss, Clinton: I did not expect to be called upon to take part in this discussion. I do not think there is anything left to discuss. However, there are many, many good points in the paper, and I do not know that I can add anything of interest to what has been said. I continue to lose patients by using the various treatments recommended by the various authors. I go along and strike what I consider the best line of treatment for these cases, and yet they go on and die just the same. I have found very little difference in the treatments I have used, provided I had used rational sense in the matter in the last ten or fifteen years.

J. W. Lukins, Louisville: We have almost

eliminated typhoid fever from Louisville. It is rare for us to have it. In the community where I live up until the last three years we had a great deal of typhoid fever. It has been two years since I have had a case of typhoid fever in our community. We have had some cases in South Louisville, but none right in our town. The last 30 cases I treated with typhoid vaccine. I know that a great many writers say typhoid vaccine has no effect, but I certainly have had good success with it. After the administration of the vaccine the temperature would come down, the fever would get normal in two weeks, with the exception of two or three cases, in every one of them fever was normal in three weeks by using typhoid vaccine. These cases had active typhoid; the diagnosis was made by all the clinical symptoms and the Widal reaction. I was very positive I had typhoid fever to deal with, and the typhoid vaccine in my cases brought about splendid results.

In treating typhoid the eliminative treatment is par excellence. When I had experience in the Marine Hospital with the treatment of cases, we treated them with castor oil. They got castor oil every morning, not less than a dram, and sometimes we would be governed by the pulse and give two drams. I have never seen it fail to bring the fever down.

With reference to nourishment, it is my experience that with typhoid fever patients when I began feeding them, I had a harder time to get them to eat than to keep them from eating. I believe in feeding typhoid fever patients. I believe it has been a mistake in the past to starve them as we have done.

So far as hemorrhage from the bowels is concerned, if I had a case of typhoid fever with hemorrhage from the bowels, I would give pituitrin and try to control it.

E. N. Hall, Bowling Green: To my mind this is one of the most important subjects we practitioners who practice medicine, and not surgery, can discuss. The paper was a most excellent one and covered the entire ground, and I would say Amen to the doctor's treatment of typhoid fever. Any ordinary case of typhoid fever will get well if you let it alone with proper nursing, proper attention to diet, and when I say diet, I mean an exclusive liquid diet. I do not feed my patients any solid food. I like a good article of buttermilk, and I find these patients will take it without any objection. I like to keep the bowels well open with castor oil, and I very rarely fail in giving a dose of castor oil each day or every second day. I believe you get elimination which will benefit the patient very materially. I believe in supporting the patient, and like to give a little strychnin early in the case.

I feel that I get results from the intestinal antiseptic treatment. Some doctor said we are not having much typhoid fever in our section simply because we have used the prophylactic

treatment. We have made it a rule to inoculate the pupils in our schools because they are typhoid carriers as a general rule in our section, and we are getting very good results from the prophylactic treatment.

As far as the therapeutic treatment by serum is concerned, I have not got any marked results from it. I have about abandoned the therapeutic treatment with serum, but strongly advocate prophylactic measures.

Two years ago I had 28 cases of typhoid fever; last year I had 9; this year I have had 4, which shows to my mind conclusively what we are doing in our section in the prophylactic treatment.

I want to add that I never fail to inoculate each member of the family in which I have a case of typhoid fever, and in a great number whom I have given the prophylactic treatment I have never seen an attack of typhoid fever with two exceptions, and those cases were so wonderfully modified that the attacks were very mild indeed.

E. A. Stevens, Mayfield: I want to speak of one point in connection with this subject, and that is the surgical side of typhoid fever. I do not claim to be a surgeon, but there is one thing in typhoid fever that I feel is neglected. Twice in my life I have operated for perforation in typhoid fever. One of these patients died in a few hours, and the other, ten years later, is living and well, making a splendid man. In two or three instances since that time I would have been willing to have operated in a country home, but my consultant has usually been against it. What I want to say about operation is this: the operation is simple and I believe cases of perforation in typhoid fever can be saved. It is an operation any man can do who knows how to open the abdomen. It needs drainage, the Fowler position, and a few stitches to sew up the gut, and any man who can do surgery can do that. Most of the patients with perforation will die it is true, but they are going to die without it and you do not have to wait to send to the city to get an expert surgeon. Expertness is desirable, but time is vital. Any man who can get there and close the perforation, who knows anything about ordinary abdominal operations, can do the work, and I feel perfectly sure that hundreds of people who die in the United States annually from perforation in connection with typhoid fever could be saved if practitioners had simply the nerve to come forward and do what they know is their duty.

J. W. Kincaid, Catlettsburg: I want to emphasize point in connection with what was said in reading the paper. I certainly decry the use of alcohol in typhoid fever in the second week, certainly not to the amount of eight or twelve ounces a day, and it is exceedingly seldom that it is ever needed in any disease.

W. W. Anderson, Newport: According to the statistics given by Cabot in two thousand consecutive cases, one-half of them with alcohol as a

routine treatment, and the other half without it, there was a greater mortality by nearly 20 per cent. among those in whom alcohol was used.

Arch Dixon, Henderson: I have had a pretty long experience in the practice of medicine, and I have had a pretty extended experience in the treatment of typhoid fever, and I want to say, the best treatment of typhoid fever is to take care of the patient. Be careful about your diet, have the patient well nursed, keep him clean, and not let him be disturbed by visitors, and do not give much, if any, medicine except castor oil, and I believe I have had better success with castor oil given every morning. It certainly prevents meteorism and its effect is beneficial, and if I was confined to one medicine with which to treat typhoid fever I should say give me castor oil.

In regard to intestinal antiseptics, I am somewhat skeptical about their use. I have used a good many of them, and I have gotten down to the point now where I use guaiacol carbonate. Perhaps it is less irritating than any of the others, and whether I get an effect I do not know, but the patients seem to do better when I give it to them than they do without it.

Where I live we are using typhoid vaccine, and especially are we using it as a prophylactic. There is no other way to prevent the spread of typhoid, and I am not so sure that it does it in every case. But if you let these patients rest, feed them buttermilk—which is the only kind of milk to use—give them good nursing and they will get on fairly well. I think sweet milk the deadliest thing you can give a typhoid patient; and I have put it on the "taboo list" for a long time. Now and then, owing to the patient's condition, cereals and well cooked soups and broths, meat juice may be permitted.

B. P. Earle, Dawson: There is only one phase of the subject to which I desire to call attention because the ground has been very well covered, and that is, with reference to prophylaxis and the prevention of typhoid fever. In my own section of the country, where we have not used prophylaxis to a great extent, except perhaps our people are more cleanly than they were a few years ago, but the fact has been demonstrated that for the past ten years in the community in which I have practiced medicine, typhoid fever has gradually been eliminated until we have very little of it. Whether the prophylaxis has done any good or not, or whether we are going through the stage in which we are not going to have typhoid fever, I do not know. I am not a youngster in the profession; I have lived long enough to know that it will not do to cast aside everything. We may use measures which we think may prevent typhoid fever, or may be they will not; at any rate, there is going to be less of it.

So far as treatment is concerned, the subject has been thoroughly covered in all its phases by

the various forms of treatment that have been advocated.

T. L. Bailey, Madisonville: There is one point I came across accidentally to which I desire to call attention, after seeing a report of Dr. Crile of Cleveland, a few days ago, it makes me think that possibly there may be some good in it, and that is with reference to the control of hemorrhage from the bowel in cases of typhoid fever. In three or four cases of typhoid fever in which there was hemorrhage from the bowels, the patients were placed in the upright position and fainted, but after they were placed in the recumbent position the hemorrhage ceased. I noticed several days ago in a paper by Dr. Crile that in cases of internal hemorrhage they would hold the patient up, but if they let him lie down during the clotting of blood it would control the hemorrhage.

J. L. Neel, Bowling Green: I have noticed that many different kinds of treatment have been advocated for typhoid fever. One gentleman has said that he has practically eliminated typhoid fever in his locality. I feel that typhoid fever has practically been eliminated in my locality. I do not know that I have had anything to do with it, but if I have it has been in trying to teach the people whom I have been serving for forty years how to live, how to keep clean, and to keep everything around them clean and I have less typhoid fever to-day than I had ten years or twenty years ago.

As far as treatment is concerned, I live out in the country and I have always pursued my own way of treating cases; I have treated the symptoms as they manifested themselves as best I could. The true physician is the man who treats his cases as the symptoms present themselves.

I have nothing new to add with reference to the vaccine treatment. I have not used it.

Lillian H. South, Bowling Green: In regard to the laboratory diagnosis of typhoid fever, the first and earliest method is the blood culture, which is usually present on the third or fourth day. The second method in order of its appearance is Ehrlich's diazo-reaction. This is not a positive reaction, but it comes on the fifth day, and if you have a case of fever in a person who has been previously well and get a positive diazo-reaction you may suspect typhoid fever. On the 8th or 10th day the Widal reaction appears. Unfortunately, this reaction does not come earlier. It depends for its positive diagnosis on the presence in the blood of certain substances called agglutinins. In the laboratory we get blood specimens sent to us on the second or third day of the fever and although this may be from a case of typhoid fever the result of the examination will be negative as it is too early for a positive Widal.

I wish I could impress upon every one of the physicians here the fact that we report upon the specimen we receive and not upon the condition

of the patient. Bear in mind that the Widal reaction is not present until the eighth or tenth day, and sometimes it may be delayed two or three weeks, and then again we may not get it at all.

O. Miller, Louisville: I would also recommend that in making a Wassermann or Widal reaction, it should be controlled with paratyphoid culture. In some cases you get a negative Widal of typhoid and not of paratyphoid.

Lillian H. South, Bowling Green: In regard to paratyphoid, we have paratyphoid A, and paratyphoid B, and we keep cultures of them all the time and make the reaction if the doctor requests it.

A. W. Cain, Somerset: I am not treating as many cases of typhoid fever as I did a few years ago. In fact, a few years ago about all we did in my county or in my town was to treat typhoid fever during the summer and fall months.

I have had very little experience with the use of serum. In Wayne county there has been more serum used in the treatment of typhoid fever than in any other section of the country with which I am acquainted. The doctors there use it generally. Almost every doctor in the county uses serum. They are men of wide experience and claim to be getting good results from it. The strange thing to me is that they are using in the treatment of typhoid fever prophylactic serum or serum we use for prophylaxis, and how they are getting such splendid results I cannot understand. I would be afraid to use serum as a treatment, but all of these doctors, many of them with years of clinical experience, keep a record of their cases and claim they are getting extraordinary results. They claim that the fever usually subsides in ten days to two weeks, that they are able to keep the temperature down easily by the administration of a serum which is ordinarily used for prophylactic purposes. If any one here has had any experience with it I would like to have them discuss it.

Another thing I am surprised at, and it is the almost unanimous opinion of the gentlemen who have spoken, is the administration of castor oil in typhoid fever. The great danger from typhoid fever, as I have understood, is from perforation and hemorrhage. We keep our patients on a liquid diet simply because we are afraid that by giving them solid food we thereby increase peristalsis and increase the danger of perforation and hemorrhage, and why we should restrict our patients to a liquid diet and advise keeping them quiet, using all precautions to prevent increase in peristalsis, and then administer a remedy which only ends up by increasing peristalsis, I cannot understand. I never had in twenty-six years experience administered a dose of castor oil to a typhoid fever patient. I have seen a number of hemorrhages and several perforations of the gut which in my opinion I could plainly trace to the administration of castor oil

in the treatment of typhoid fever. We all know that castor oil simply acts by increasing peristalsis, and what is the use of trying to keep our patients on a liquid diet, using every other means to prevent peristalsis, and then administer a drug whose only action is to increase peristalsis, thereby endangering our patients both in the way of perforation and hemorrhage.

V. A. Stille, Benton: I do not know that I can add anything of interest to what has been said except to say that I have been very much benefitted by the paper and the discussion as well.

The thing that we try to do with our folks at home is rather to treat those that are well, that is, teach them how to live, and how to act to prevent the spread of typhoid fever. Instruct them to take care of all passages by burning them or disinfecting them, to keep the patient clean, to keep the whole family clean, to keep the drinking utensils as nearly clean as we can, and use typhoid vaccine, and have not had in my experience as many as two cases of typhoid fever in the same family in three or four years. We vaccinate them. I instruct the parents to burn the passages, to take care of everything as cleanly as they possibly can, they do not have a second case of the disease, especially if they will let you vaccinate. Almost all people of the better class will let you vaccinate, for you can show them that it will be money saved and possibly a life saved. We have done quite a bit of it. And then, of course, the treatment of typhoid fever consists in giving more or less medicine to meet the indications and conserve your patient's strength. However, I do not feel that there is any one thing more important than to keep the patient clean inside and out. Feed very carefully and I prefer a buttermilk diet as a rule. Regarding hemorrhage, there is nothing that will prevent it except to keep the bowels as quiet as possible because if you have an ulcer of the intestine close to a blood vessel of any size you will have hemorrhage regardless of what you may give.

The treatment to my mind is symptomatic, and to meet the indications as they may arise, for no two cases are exactly alike.

W. F. Boggess, Louisville: I have enjoyed this discussion very much and have listened to it with a great deal of interest and pleasure.

As to the question of typhoid fever patients getting well without any treatment, that is true of a great many cases, but instead of getting well in 21 days or 28 days, in three weeks or four weeks, as they should under proper handling and proper treatment, they get well by the grace of God in six or seven or twelve weeks.

The question in handling typhoid fever is not trusting entirely to nature. While we have no specific for typhoid fever, and granting that in a measure it is a self-limiting disease, there is no disease where intelligence and tact can be used to so great an advantage as in typhoid fever, and

the first thing is the question of diet. I believe that a lot of patients with typhoid fever under the old treatment died of starvation acidosis rather than from typhoid toxemia. I am sure of that. I am sure, that emaciation and starvation and to the old sweet milk treatment and locking up the bowels, and leaving them locked up with an occasional enema, caused more deaths from starvation acidosis than from typhoid toxemia.

This question of diet is one of the most important subjects we can discuss in connection with typhoid fever. We should give the patient enough calories to keep up not only weight but give enough calories to sustain it. Do not give a drop of sweet milk in typhoid fever as it serves as an excellent culture medium and increases toxemia. Give these patients buttermilk. Give them soups made out of vegetables. Give them toast, give them cereals, thus giving them some carbohydrates, and do not put these patients on a protein diet entirely. You can keep up the calories of a typhoid fever patient to 3000 without any difficulty at all, and not rely entirely upon protein. You can supply the amount of calories and a certain amount of food products essential in the carbohydrates and in the starches with egg albumen and cream. There is no reason why a patient should not have occasionally a well baked potato or enjoy a nice juicy steak to chew or have toasted cornflakes and oatmeal. There is no reason why a patient should not have carbohydrates in addition to proteins, if necessary. So much for that.

About 20 years ago I read a paper on the treatment of typhoid fever in which I advocated the administration of castor oil every second or third day, and I was jumped on heavily and told I was committing homicide every time I did it. They said it was just as reasonable to give rattlesnake poison as to give a dose of castor oil; that it increased peristalsis. Now, gentlemen, if there is any specific in typhoid it is castor oil, and it should be given every second or third day. When you give castor oil every second or third day in small doses, there is less likelihood of hemorrhage. If you do not give castor oil, you balloon the abdomen and get typical typhoid tympany. The bowel will swell until it is ready to burst from the intra-intestinal tension. The surgeon before he operates on an abdominal case gives a dose of castor oil, and when he opens the bowel it is perfectly flat. Castor oil lessens the tendency to tympany. The tympany caused by fermentation and putrefaction within the bowel stretches the gut and promotes hemorrhage. That is one explanation of it.

I believe there is something in the use of intestinal antiseptics, not that you can destroy the toxemia of typhoid fever by them, but you can lessen the amount of intestinal toxemia with them, and above all, you can lessen the amount of urinary toxemia. There is a large amount of

toxemia in the urinary tract. There is no disease known where you have so much bacilluria after the tenth or fifteenth day as in typhoid fever. You give urotropin in ten grain doses, three times a day, and five grains of salol every four hours. If you have catarrh or ulceration of the intestinal tract in any other disease except typhoid fever, what would you do? You would give large doses of bismuth, coat over for the sedative effect upon the ulcerous gut. Why not do it in typhoid fever whether the patient is constipated or not; give fifty grains of bismuth with salol or urotropin, three times a day. It can't do anything but good. In any other condition of like character, with many feet of ulcerous gut, you use bismuth, and why not use it in these cases of typhoid fever.

Just a word about vaccines. If we have seen wonderful results in the prophylaxis of typhoid fever from typhoid vaccine, it occurs to me that we also ought to have some influence by the injection of typhoid vaccine. I think there is a tendency to bring the temperature of typhoid fever patients down to normal in three or four weeks. The most dangerous complication of typhoid fever is not hemorrhage so much, because if you give these things you will not have hemorrhage, but involvement of the gall-bladder. The only two cases of typhoid fever I have lost in a number of years, were patients who had perforations of the gall-bladder. If there is any condition in which vaccine is indicated, it is to prevent severe ulceration of the gall-bladder, to prevent typhoid cholecystitis. The vaccine not only has a tendency to shorten the duration of the disease itself, but it has a tendency to prevent serious involvement of the gall-bladder, and other localized foci.

Preparation of Stable Colloidal Antimony.—

Upendra Nath Brahmachari (Lancet, October 21, 1916) reports the remarkable therapeutic properties of antimony in several protozoal diseases. The increasing appreciation of the value of metals in colloidal form has led to attempts to prepare a stable colloidal antimony, but so far with poor success. The author states that it may be prepared in stable form by the following method: A current is passed in sparks from an induction coil, and an eight volt accumulator between two aluminum foil electrodes immersed in chloroform containing coarse particles of metallic antimony. The antimony passes into a powdery state and some goes into solution. When the chloroform is distilled off a lardy residue of colloidal antimony is left. This can be dried in a desiccator, in air, or even over a Bunsen burner without materially affecting it, and may be employed in the preparation of solutions of the drug in colloidal form.

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NEXT MEETING STATE ASSOCIATION,
ASHLAND, 1917

COUNTY SOCIETY REPORTS

Boyd—The annual meeting of the Boyd County Medical Society was held in Ashland, December 18th, 1916. Nineteen members and two invited guests, Dr. J. W. Stephenson and Dr. Bryson, were present.

A nice three-course banquet was served and all present proved themselves to be very active members at this time.

By vote of the society the secretary was instructed to write the State Board of Health to provide the physicians of this society with blanks for morbidity reports.

The following officers were elected for the ensuing year:

J. M. Salmon, President; G. W. Moore, Vice President; J. M. Prichard, Secretary; J. A. Sparks, Treasurer; W. O. Eaton, Censor; P. C. Layne, Delegate to the State Meeting; W. A. Berry, Alternate.

By vote of the society the dues for the ensuing year was raised to ten dollars.

J. M. PRICHARD, Secretary.

Barren—The Barren County Medical Society met in Dr. Bott's office, Glasgow, December 20th, 1916, with the following members in attendance: Porter, Siddens, Botts, Miller, Smock, Biggers, Taylor, and Howard.

President Smock called the society to order, and presided with his usual dignity.

There being no papers, nor clinical reports, the society proceeded to elect officers for 1917 as follows:

T. F. Miller, President; M. F. Biggers, Vice President; J. M. Taylor, Secretary; R. H. Porter, Delegate; A. T. Botts, Alternate; J. G. Siddens, Censor.

Owing to the inclement weather the attendance was small, but every one present manifested much interest in society work, and we have reason to believe that our meetings next year will be more interesting than ever before. Half of our members have already paid their dues for next year.

Agreed on motion that our Committee on program be directed to select and assign subject for next year, and have same printed as early as possible. T. F. Miller, J. M. Taylor, and R. H. Porter compose said committee.

There being no further business, the society adjourned to meet in Glasgow, January 17th, 1917.

J. M. TAYLOR, Secretary.

Barren—The Barren County Medical Society met in Glasgow, October 18, 1916, with the following members present: Smock, C. C. Turner, Botts, Taylor, Miller, Acton and Porter.

S. J. Smock called the society to order.

Minutes of the last meeting were read and received.

On call for clinical cases T. F. Miller present-

ed an interesting case, a patient of Dr. White, a child with a large abscess near the mammary gland, which was consecutive to inflamed glands in the axilla, all the result of what seemed to be a slight injury of the corresponding arm. The case was discussed by several members, and valuable suggestions made as to treatment.

Several other cases were reported, which were discussed by nearly every one present.

S. J. Smock read an interesting paper on Sanitation in small towns. His treatment of the subject was able and up to date.

Adjourned to meet November 15th, 1916.

J. M. TAYLOR, Secretary.

Bath—The Bath County Medical Society met at Owingsville, December 11, 1916, at 11 o'clock, with H. S. Gilmore, president, in the chair, with the following members present: J. K. Wells, L. F. Bobbins, N. T. Clarke, A. W. Walden, S. C. Alexander, H. J. Daily, A. W. Jones, H. S. Gilmore, H. L. Nickell, I. A. Shirley, Councilor of Tenth District and W. S. Reeves of Fleming county, and J. S. Goodpaster.

The following officers for 1917, were elected:

H. L. Nickell, President; J. K. Wells, Vice-President; H. J. Daily, Secretary-Treasurer; N. T. Clarke; Delegate to State Association, S. C. Alexander; Alternate, J. S. Goodpaster.

The Secretary was ordered to write for morbidity report blanks for the doctors of Bath county.

There being no further business we adjourned to the Owning's House, where we did justice to a good dinner.

H. J. DAILY, Secretary.

Boone—In making the annual report of the Boone County Medical Society for the year 1917, it is with a feeling of sadness that the name of Dr. A. M. Glass is left off. His death occurred on June 21, 1916, as a result of malignant disease of the tonsil. In his death Boone county—yes Eastern Kentucky, has lost one of the most beautiful characters that has ever been in our midst. Dr. Glass at the time of his death was only 53 years old. He was a hard worker, a close student and early a leader in the medical profession. Dr. Glass needed no printed code of ethics, as he was full of life, truth, virtue and all the manly traits that go to make up one of God Almighty's gentlemen. May we who survive him ever try to follow in his foot prints. His body rests on a nearby hill overlooking the little town that claimed him. Peace to his ashes, everlasting joy and happiness to his redeemed spirit. Sympathy and love for his family whom he idolized.

C. M. ANDERSON.

Carlisle—The Carlisle County Medical Society met in the I. O. O. F. hall at Bardwell, December 5th, 1916. In the absence of the president, R. T. Hocker was called to the chair. Rev. Kener Ru-

dolph opened with prayer. Committee on Arrangement made report.

W. Z. Jackson made a splendid report of what he saw, heard and did at the State Medical Association, which was very interesting. He called especial attention to the so-called Indian Doctor at Somerset. His past and present fame and "fraud." The unfortunate favorable support of the court and people of that vicinity. He reported the high class entertainment given by the Hopkinsville doctors. He also reviewed Dr. Bloodgood's splendid address, also Dr. Bass's address on "Malaria" to our edification.

Noon.

Afternoon Session.

Geo. W. Payne gave a most interesting paper on "Complications and Sequella of Lobar Pneumonia." Pleurisy was discussed as being a most frequent complication of pneumonia. Endocarditis occurs most frequently during convalescence and affects left heart most often.

Meningitis is often associated with endocarditis.

Tuberculosis is most frequent sequella of pneumonia and should be carefully watched for.

H. T. Crouch, gave a valuable paper on treatment of pneumonia. He reviewed the various treatments used from time to time, and emphasized the superior value of the so-called expectant method.

The essayist thinks the open air treatment most practical in this climate. He advocates water freely, advised careful feeding at frequent intervals.

Drugs are few and simple. Watchful waiting and drugs as indicated is his idea.

Carbonate creosote 10 to 15 gtt. dose every 4 hours, is perhaps one of the best drugs used today, but I would hesitate to give to cases that had nephritis.

J. T. Marshall, being called away did not get to read his paper on "Definition, Etiology and Pathology."

The three papers were discussed by R. T. Hocker, Dunn, Jackson, Crouch and Payne.

R. T. Hocker reviewed the different modes of treatment for the past 40 years up to present time, which was very interesting.

After the scientific program was over the society went into the election of officers, which resulted as follows:

H. T. Crouch, President; D. S. Robertson, Vice President; W. Z. Jackson, Secretary; Geo. W. Payne, Treasurer.

Motion carried to meet in the office of J. F. Dunn, at Arlington, the first Tuesday in March, 1917.

The following compose the Committee on Arrangements: Hocker, Jackson and Dunn.

W. Z. JACKSON, Secretary.

Christian—The Christian County Medical Society met Tuesday, December 19, 1916, at the Hopkinsville Public Library.

The Library has been chosen as the regular place of meeting and a telephone installed for the physicians' use.

C. M. Gower, of Trenton, read a very interesting paper on "Some Tubercular Problems," which was freely discussed.

The election of officers resulted as follows: W. S. Sandbach, President; J. W. Harned, Secretary and Treasurer; Austin Bell, Vice President; J. H. Rice, Censor; J. W. Harned Delegate to State Association; Alternates, Barnes, Watts.

J. W. HARNED, Secretary.

Clark—The Clark County Medical Society met for the annual election of officers at the office of Dr. F. H. Brown. There were 20 doctors present and good fellowship prevailed.

The election of officers resulted in the following men being selected for the ensuing year:

H. R. Henry, President; C. M. Driver, Vice President; W. Carl Grant, Secretary and Treasurer.

After collecting dues from all present the meeting adjourned to the Brown-Proctoria Hotel for dinner.

Brown Ishmael as chairman of the furnishing Committee of the new hospital, reported all rooms taken except two wards and sterilizing room. These to be furnished by private individuals or organizations. He also reported a gift of \$500 on the operating room.

The society met according to the articles of incorporation for the hospital on January 8th, with Dr. Ernest Cole and selected the following to serve as the hospital staff: Drs. J. W. Ishmael, C. G. Stephenson, B. F. Johnson, D. H. McKinley, T. H. Brown and G. F. Doyle.

They are to provide for a rotating staff to be selected according to service desired from members of the Clark County Medical Society. We expect to be in our new hospital in a short time.

W. CARL GRANT, Secretary.

Calloway—The Calloway County Medical Society held its annual meeting Wednesday, December 13th and the following were elected officers:

President, B. B. Keys, Murray; Vice President, C. O. Gingles, Murray; Secretary-Treasurer, W. H. Graves, Murray; Delegate, Richard Keys, Murray.

The society voted to request the State Board of Health to furnish blanks and franking privileges for morbidity reports.

W. H. Graves, Secretary.

Caldwell—At a meeting of the Caldwell County Medical Society held in Princeton on Monday, December 18, 1916, the following officers were elected for the year 1917: W. P. Moore, President; I. Z. Baiber, Vice President; W. L. Cash,

Secretary and Treasurer; P. R. Shelby, Delegate to the State Medical Association; L. O. Young, Alternate; L. J. Spickard, Member of Board of Censors for three years.

W. L. CASH, Secretary.

Franklin—At an adjourned regular meeting for December, held on the 29th of December, 1916, the following officers were elected for the year 1917:

John G. South, President; E. C. Roemele, Vice President; L. T. Minish, Delegate; U. V. Williams, Secretary.

The great handicap of the successful meeting of county societies is a failure to have at each meeting an interesting paper by some member of the society. To obviate this difficulty Dr. Williams suggested that the meetings of the society be converted into a Round Table discussion of some pertinent subject by each member of the society in a three or five minutes' talk, giving his personal experience on that subject, in which each member is expected to participate, by which departure we expect to arouse enthusiasm and make each meeting profitable from a local standpoint. Subject for first Round Table: "Pituitrin." The next meeting will be held with Dr. John G. South, the retiring 1916 president.

It is the desire of the Secretary that we make 1917 the banner year of the society, which can only be done by prompt attendance and hearty cooperation.

Let us make this meeting a Happy Reunion and a pledge of our individual support and the rechristening of the society to a new birth and renewed activity and greater usefulness and pleasant and brotherly association.

The place of the retiring censor will be filled at next meeting by the President. State dues, \$3.00; county dues \$1.00, now due.

After which the meeting adjourned.

U. V. WILLIAMS, Secretary.

Grant—The Grant County Society met January 8th at Carlsbad Hotel, Dry Ridge, and a resolution was passed requesting the Secretary of the State Board of Health to furnish members of this society with morbidity reports. The society moved to make Carlsbad Hotel their permanent meeting place, and the time of meeting to be the third Wednesday of each month.

Henry—The Henry County Medical Society met December 20th, for the purpose of electing the officers for the year 1917, also for paying of fees. There were twelve doctors present, also editor of the newspaper as well as the County Judge. The following were present: Hartman, Chapman, Bell, Johnson, Dowden, Holt, Howes, Goodwin, Carroll, Suter, McDowell, Nuttall, Judge Kavanaugh, Editor E. A. Gullian, and the secretary himself. As W. L. Nuttall was the oldest member and has been a member ever since the

beginning he was unanimously elected honorary member. Every doctor voted yes, on the raising of the obstetrical fee to \$15.00, and other fees as well. We had the pleasure of taking into the society, Drs. Holt and McDonald. At the next meeting, which will be the last Monday in January, Dr. McDonald will write a paper on "Pneumonia." After the regular order of business, we had a banquet at the Castle Hotel, in other words, we had what is termed a turkey dinner.

W. B. OLDDHAM, Secretary.

Harlan—The Harlan County Medical Society met December 16, at the Harlan Hospital, Harlan, at 8 P. M. The meeting was called to order by E. M. Howard, the Secretary, A. Jenkins; the President; L. H. Boone, the Vice President being absent.

At opening of the meeting there were reports of cases and general discussions. At 9 P. M. we retired to the beautiful dining room of the hospital and enjoyed a delightful banquet consisting of garnished roasted turkey, scalloped oysters, sandwiches, etc. At 9:45 we went to the waiting room and had a general discussion of the past year's program consisting of, namely: Sequelae of Gonorrhea; Abortion, Pathology and Treatment of Roads; Treatment of the Eyes of the Newborn; Pneumonia; Pellagra; Appendicitis; Blood Pressure; Abdominal and Pelvic Pain; General and Special Fractures; Tonsillitis and Otitis Media; Asthma; Typhoid Fever; Cystitis; Enterocolitis; Complications of Obstetrics; Medical Ethics; Hay Fever; Rheumatism; Dysmenorrhea; Amenorrhea; Menorrhagia; Bad Air. As you see, quite an elaborate program for the past year. Some very interesting papers were read during the year.

At the close of the discussions the society proceeded to the election of officers for 1917, which resulted as follows:

G. P. Bailey, Harlan, President; W. P. Cawood, Harlan, Vice President; Chas. V. Stark, Evarts, Secretary-Treasurer;

The society will meet the last Saturday in each month through the year.

The program for the January 27th meeting is as follows: G. P. Bailey, "Pneumonia; Its Treatment"; L. H. Boone, "Wounds," His Treatment; Report of Special Cases, W. P. Cawood.

Joseph Nolen and W. W. Sneed were taken in as new members.

We wish the Journal a prosperous New Year.

CHAS. V. STARK, Secretary.

Jefferson—The following report for the year ending December 31st, 1916, is hereby respectfully submitted by your acting secretary.

Your acting Secretary was elected at the last June meeting to fill the place of your regularly elected secretary, Dr. E. Owsley Grant, during his absence. Though in office but one half the term the record of the proceedings as kept by

the secretary during the first half of the term make it possible to submit a complete report of the society's fiscal year, ending with the present meeting.

The society's membership in number is at its highest ebb, showing a net gain over last year of sixteen.

The finances of the society are in excellent condition as shown by your treasurer's report.

The relations between your officers and the committees have been congenial and pleasant in their work for the society, and in their team work there has been harmony.

The scientific work as submitted in detail later in this report has fallen short of previous years, especially in the matter of the presentation of clinical cases and pathological specimens.

It must be frankly admitted that neither the attendance nor the general interest has been what it should be in a society of this size, and one which is equipped for good work as this one is. A condition of apathy seems to have developed during the last half of the year more especially, and your acting secretary in his recommendations at the close of this brief report, submits for your consideration, two or three ideas which he believes may help to overcome this lethargy, which like a disease is sapping the vitality and enthusiasm of our organization.

Such a condition is discouraging to prospective essayists, who feel that the work, time, study, and energy which they put into their offering is largely wasted, with an audience both small and uninterested.

SCIENTIFIC WORK.

The programs as made up by the Program Committee have been valuable and well balanced. This committee, especially that part of it who has charge of the clinical cases and specimens, has had considerable difficulty at times, in making up the month's program. I wish here to thank them for their untiring efforts each month, until the work was accomplished and the program complete.

LIBRARY.

The Library has grown during the past year, is indexed, and is in every way, more valuable than ever before. Indeed, your acting Secretary feels that the members, as a whole, do not know what an excellent library we have, and do not appreciate it as it is not patronized to the extent that its value warrants.

Your acting Secretary desires to thank the Library Board for their work for the library, and for the interest shown, and time given. It is urged here that the proposed amendment to the Constitution regarding the appropriation for the Library be adopted, as the board is at present hampered in its work for the library by lack of funds.

POLICIES FOR THE PROFESSIONAL WELFARE.

Two meetings of the profession at large were called by our President, and held under the auspices of this society, and at its expense, for the purpose of discussing the feasibility of adopting a fee schedule in connection with the Workmen's Compensation Act recently passed by our Legislature. At the first of these meetings a committee was appointed, with Dr. C. G. Forsee as Chairman, to gather data as to the action taken in other sections on the same question. At the second meeting of the profession at large, this committee reported back, submitting a specimen schedule of minimum fees based upon the schedules adopted by the various societies and organizations throughout the country. After a prolonged discussion of the subject no schedule was adopted. The thanks of the society are due Dr. Forsee for his work in this matter, the complete record of which can be found in the minutes.

OFFICERS AND COMMITTEES.

Officers	5
Executive Committee	3
Judicial Council	6
Membership Committee	4
Program Committee	3
Clinical Cases and Specimens	2
Library Board	12
Milk Commission	4
Librarian	1

MEETINGS AND WORK DONE.

Meetings	40
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All meetings have been held in our regular quarters, except the last meeting in June, at which time the society was entertained by Dr. Dunning S. Wilson, at Waverly Hills Sanatorium. This meeting with its delightful luncheon, music and dancing was thoroughly enjoyed by the members who made the trip.

Present average attendance, estimated	60
Essays	30
Symposiums	3
Addresses by non-members	6
Called meetings	2
Patients presented	9
Specimens exhibited	12
Cases reported	74
Discussions	349

MEMBERSHIP.

Close of 1915	281
Number elected in 1916	35
Number reinstated in 1916	21
.....	337
Delinquent in 1916	27
Left county in 1916	12
Lost by death	1

40

Members in 1916	297
Members in 1915	281

Net gain	16
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RECOMMENDATIONS.

In closing, your acting Secretary submits for your consideration the following recommendations:

First, that the dues remain at the present figure, \$10.00; second, that the society lend its whole-hearted support to the effort now being made toward the re-establishment of the Jefferson County Supplement of the State Journal, as it is believed that a special Journal for the publication of our proceedings would stimulate interest; third, that the society consider meeting bi-weekly instead of weekly; fourth, that the proposition be considered of having as our guest, occasionally, some man of national eminence to read an essay, and on such occasions the society provide a buffet luncheon, smoker, or some such social feature; sixth, that the society purchase or order made an illuminating cabinet for the exhibition of X-ray plates. It has been suggested that an efficient one can be designed and made at a figure considerably less than that asked for those on sale.

In closing, your acting Secretary wishes to express his thanks to the officers and members of the various committees, for their hearty co-operation, and also to the Librarian, Miss May Coon, whose efficient help has rendered his work more pleasant and less arduous than it otherwise would have been. Also he wishes to express his appreciation of the work of our capable stenographer, Mr. H. S. Smith, and his regret that Mr. Smith finds his other duties so pressing as to necessitate his resignation.

NEW COMMITTEES APPOINTED BY THE PRESIDENT FOR 1917.

Membership Committee—Leo Bloch, Chairman; Jos. A. Sweeney, J. R. Peabody, H. L. Read.

Program Committee—W. Barnett Owen, Chairman; Sam P. Myer, Jethra Hancock.

Clinical Cases and Specimens—Chas. Farmer, D. Y. Keith.

The other committees stand as they did last year.

The result of our annual election, Monday evening, December 18th, was as follows:

President, Granville S. Hanes; First Vice President, E. L. Henderson; Second Vice President, J. B. Lukins; Treasurer, Frank Ritter.

The two new members of the Judicial Council are Drs. George Hendon, and Guy C. Forsee.

W. HAMILTON LONG, Secretary.

Laurel—The Laurel County Medical Society met December 20th, 1916, at 1:30 P. M., in the office of the secretary, with eight members present.

The meeting was called to order by the President. Minutes of the previous meeting read and adopted. On motion the society then proceeded with the election of officers for the ensuing year and the following were elected:

President, J. W. Parker, East Bernstadt; Vice President, J. I. Smith, London; Secretary-Treasurer, Oscar D. Brock, London; Censor, William Johnson, London; Delegate, H. V. Pennington, London; Alternate, W. H. Joyner, East Bernstadt.

The society voted unanimously to extend an urgent invitation to Dr. J. N. McCormack to visit us this year, at a time suited to his convenience, to lecture and otherwise help further the cause of health in our county. Motion that we request the State Board of Health to furnish all the doctors in Laurel County with the necessary blanks for making morbidity reports. Carried.

Motion that our society shall meet monthly for this year. Carried. The society pledged its hearty cooperation and support of G. S. Brock, health officer, and expressed appreciation of the work he is doing. We are striving to make the year 1917 the best year in history of our society.

OSCAR D. BROCK, Secretary.

Logan—The regular monthly meeting of Logan County Medical Society was held at the court house, January 1st, 1917. Meeting called to order by J. R. Crittenden, Vice President.

Minutes read and approved.

W. L. Gossett then occupied the chair as President of the society for 1917.

The Committee on Resolutions on the death of Dr. A. M. Crittenden, reported the following:

We, your Committee, appointed to draft resolutions of respect, concerning the death of Dr. A. M. Crittenden, who was a valued member of the Logan County Medical Society from the time of its organization until the time of his death, which occurred on November 15th, 1916, beg to submit the following:

Whereas, it pleased the all-wise Ruler of the Universe, who doeth all things well, to call from this mundane existence to a brighter and better world, where there is neither disease nor death to be suffered, and where perfect peace and rest are the rewards of the faithful servant, our beloved colleague and society associate, Dr. A. M. Crittenden, on November 15th, 1916, and,

Whereas, we hold him in highest respect and considered him one of the ablest and most dutiful members of our profession and of this society, a man who measured well up to the standard of a true physician, capable, tender of heart, devoted in his services to the sick and suffering who sought his services and the soul of honor in his dealings with his fellowman; therefore, be it

Resolved, That this society has lost a true and worthy member, our profession a brother with whom it was a pleasure to fraternize, in the com-

munity in which he lived and served as physician and citizen he will be keenly missed.

Resolved, That we extend our deepest and heartfelt sympathy to his sorely bereaved wife and other relatives and friends and that we commend them to the Great Physician, who alone can supply a soothing balm to their saddened hearts. Be it further

Resolved, That a copy of these resolutions be spread upon the minutes of our society and a copy be furnished our State Medical Journal and another copy be sent to the wife of our deceased brother.

W. R. BURR,
J. K. W. PIPER,
W. L. GOSSETT,
Committee.

The Committee on Annual Program reported and program for first quarter approved as follows:

First Month

1. Acute Inflammations of Heart: (a) Pericarditis; (b) Endocarditis.

Second Month

1. Valvular Lesions of Heart: (a) Aortic Lesions; (b) Mitral Lesions; (c) Tricuspid Lesions.

Third Month

1. General Cardio-Vascular Disease: (a) Blood Pressure; (b) Secondary Heart Lesions.

Motion made by Dr. Haberer, seconded by Dr. Piper, that the secretary notify every member that action will be taken at the regular meeting in March to alter By-Laws so as to make it compulsory on members to attend at least two meetings during the year or forfeit their membership.

Motion carried.

The society then adjourned.

WALTER BYRNE, SR.,
Acting Secretary.

Mason—The annual meeting of the Mason County Medical Society was called to order by Dr. Taulbee. The secretary, Dr. Samuels, was then called upon for a report of the last meeting; report was read and accepted. Financial statement of the secretary showed, collected during the past year \$18.50, expended \$10.00, balance on hand \$8.50, which was to be paid over to the incoming secretary.

After the regular order of business, the election of officers was called for by President Taulbee. The following officers were elected: President, P. G. Smoot; Vice President, Irvin Berry; Secretary-Treasurer, G. L. Howard; Board of Censors, T. G. Robb, for the next three years.

A motion made by A. O. Taylor, and seconded by Dr. Samuels, that the present dues be continued as they were last year, \$3.50.

A motion was made that the secretary see the School Board and arrange for the regular meeting of the society to be held at the High School;

this motion was made by Dr. Long, and was seconded by Dr. Robb. Carried.

A. O. Taylor moved that the next meeting of the society be held on Friday, March 30th, at seven o'clock P. M.; motion was seconded by Dr. Berry; it was suggested that following the meeting, a banquet should be held at one of the hotels.

L. H. Long offered the following resolution, which was accepted by the society:

We, the Mason County Medical Society, desire to, and take pleasure in expressing a vote of confidence in, and appreciation of our present County Health Officer, Dr. S. R. Harover, in his efficient and painstaking discharge of the manifold and exacting duties of the public health officer. During his term of service the slaughter houses have been cleaned up, the dairies have been inspected, cows tested, and various epidemics of contagious diseases have been suppressed, due to his co-operation with the local medical men of the county.

This resolution was unanimously adopted by the society.

The society discussed what was of mutual benefit to their interest, in reference to fees, and which was urged upon all members to charge the fees adopted at last meeting, when the regular fees to be charged were accepted by the society at that time, same to be carried out from now and henceforth, by all the members.

Also, a discussion in regard to holding the meetings of the society in the summer time, in different parts of the county, for the benefit of the county physicians. The President brought up the subject of inviting outside physicians to come, and make addresses before the society, and it was urged upon each member of the society to present papers on different subjects, which would be of mutual interest to the society, that whenever they had some difficult case, if it were possible for them to do so, to bring the patient before the society, where they could hold a clinic and consultation.

The following members paid their dues for 1917: A. O. Taylor, J. H. Samuels, Long, S. R. Harover, A. R. Quigley, Robb, Win Hord, Irvin Berry, G. Smoot, and G. L. Howard. Dr. Win Hord was named as delegate from the Mason County Society to attend the next State meeting, and all the members of the society as alternates.

G. L. HOWARD, Secretary.

Muhlenburg—The Muhlenburg County Medical Society met in Masonic Hall, Central City, December 27, 1916, at 1 P. M. with T. G. Turner, Vice President, presiding.

The election of officers resulted as follows: H. Y. Slayton, Greenville, President; F. K. Foley, Central City, Vice President; Clarence Woodburn, Secretary and Treasurer; L. D. F. Whitaker, Greenville, Representative; Jno. G. Walton,

Central City, C. G. Crowder, Mereer, and Claude Wilson, Greenville, Censors.

By a unanimous vote, Miss Colvin, County Tubercular Nurse, was elected an honorary member.

On motion and second, the dues for 1917 were raised to \$3.75.

Moved and seconded that we commend and thank the Kentucky State Board of Health and the Kentucky State Medical Society for their untiring effort for the betterment and advancement of the medical profession in this State, also for their endorsement and support of the laws pending and passed at the last session of the legislature for the welfare of the common people. Carried.

The society adjourned to meet in Central City on January 24th, 1917.

The following card has been sent to every physician in the county:

My Dear Doctor:—

The Muhlenberg County Medical Society meets every fourth Wednesday, at 1 P. M., in Central City, Ky.

The fourth Wednesday is on August 23rd, 1916; September 27th, 1916; October 25th, 1916; November 22nd, 1916; December 27th, 1916, Annual Election of Officers; January 24th, 1917.

You are urgently requested to be present and take part in the discussion. An interesting Program at each meeting.

CLARENCE WOODBURN, Secretary.

Muldraugh Hill—Meeting of the Muldraugh Hill Medical Society called to order at 10:45 A. M., in the city hall Elizabethtown, December 13, 1916, by President Ridgway, about twenty members being present.

The secretary read the annual report showing a substantial balance in the treasury and the society in a flourishing condition.

A discussion concerning the welfare of the society was precipitated by a report that the society was run for the benefit of the doctors of Louisville. A number of men took part in the discussion and it was agreed that the benefits were decidedly mutual.

In order to excite greater interest in the society and get the county members on the program it was urged that they bring clinical cases and make the meetings more clinical instead of having so many essays.

The secretary refused re-election, stating that he thought the best interests of the society demanded a secretary located in the center of the district so he could reach the out-of-town members.

Election of officers resulted as follows:

R. T. Layman, Cecilian, President.

The Vice Presidents were appointed for each county, being the county secretaries for that county.

H. R. Nusz, of Cecilian, was elected Secretary.

The new officers were immediately installed and took up their duties.

Scientific Program.

R. T. Layman reported a case of "Tetanus," developing from a rusty nail in the foot. Developed on the tenth day. Side of body opposite from wound was rigid. Gave anti-tetanic serum in 5,000-10,000 unit doses. Later opened up wound and packed. Patient recovered. He asked for suggestions in the treatment of these cases and a record of the experiences of the other members.

W. F. Boggess, of Louisville, read a paper on the "Modern Handling of Diabetics."

J. T. Rogers opened the discussion by reporting two cases of diabetes (brothers) who died very quickly, one within six weeks after the disease was discovered.

P. F. Barbour stated that diabetes in young children was very fatal, all dying. Complimented the doctor on his paper.

Curran Pope stated that Dr. Gulper, of Paris, and not Dr. Allen should be given credit for this method of treatment. Combined rest, purgation, and starvation followed by alcohol and later diet up to the point of carbohydrate tolerance for that patient. Thought regulated exercise was highly beneficial. Should seek points of focal infection and eliminate them so far as possible. Treat the patient and not the disease. Be sure to ascertain whether the patient has syphilis. Should be treated.

H. N. Leavell discussed diabetic gangrene. Reported a case of amputation that refused to heal until alkalies were given to combat the acidosis.

P. F. Barbour discussed Dr. Layman's case of tetanus by telling of veterinary uses in transfusion of blood between animals.

W. E. Gardner complimented Dr. Layman and commended especially his giving of morphine during the convulsive seizures.

R. C. McChord spoke of the importance of prevention. Thought in all suspicious cases wound should be treated openly and antiseptic serum administered.

J. R. Wathen spoke of the prognosis of the cases. The later the case develops the more favorable. Thought anti-tetanic serum should be given early and in large doses. In present war deaths from tetanus are less than one per cent. because serum is given as a prophylactic. Spoke of different schools of thought in treatment of wounds. Saline, iodine, carbolic acid all are in disuse. A solution of hypochlorous acid 4-5 per cent. is found to be best in the treatment of these wounds. The solution is called Dakines' solution.

Society adjourned for dinner.

After dinner the society reconvened at 1:30 P. M.

A. O. Pfingst, of Louisville, read a paper on "Paroxysmal Sneezing."

G. C. Hall opened the discussion. Complimented the doctor on his paper and agreed largely with his conclusions. Cases were difficult to influence. Thought he had seen good results from large doses of alkalies in hyperesthetic rhinitis; possibly an acidosis. Thought pronounced deformities in nose should be corrected surgically. While not a cure made people more comfortable. In hay fever thought that with discovery of pollen as causative factor a new field had been opened up and that we would be able to control these cases in the near future. Spoke of theory that the seizures stop not as a result of frost but due to a gradually acquired immunity. A great deal of detail in the treatment of these cases has yet to be worked out and we should not be misled by glowing accounts of interested firms in the wonderful success of their products.

P. F. Barbour discussed the paper and told of the difficulty in finding the cause of the disorder.

D. W. Gaddie, of Hodgenville, spoke of a remedy for sneezing; 20 grains of menthol in alcohol applied to the nasal mucosa.

J. W. O'Connor, of Elizabethtown, asked what was the reason that old books made people sneeze? He was subject to this irritation.

A. O. Pfingst in closing thought that the stopping of the paroxysm was due either to the frost or was psychic and not due to the development of an immunity.

W. J. Shacklette, of Glendale, read a paper on "The General Practitioner, His Patients, and the Specialist."

P. F. Barbour, of Louisville, read a paper on "Acidosis."

H. N. Leavell opened the discussion of Dr. Shacklette's paper. Thought the doctors were following the line of least resistance and not ready to fight abuses infringing on their rights. Doctor should be in a position to give the public more and actually give more.

Discussing Dr. Barbour's paper thought that the old custom of going to the springs once or twice a year was a splendid idea as it relieved the patients of acidosis. Thought ulcer of the stomach might be due to acidosis and ulcer healed better when no acidosis was present. Deepened respiration may be due to lack of oxygen in blood or to stimulation of muscular system to greater effort by reason of acidity. Delayed healing results from acidosis.

Curran Pope thought dissensions among doctors was responsible for lack of grip on public. About acidosis, after many examinations found it to be very complex subject. Blood may be too high in protein content with formation of amido acids. Blood had a secretory function in white cell. People who have chronic ill health, sub-oxidation all have acidosis. Colds and all infections, pyorrhea for instance, produce an acidosis. In arthritis same conditions obtains due to focal infections.

J. R. Wathen, of Louisville, spoke of Dr.

Crile's work in calling attention to acidosis and the necessity of keeping careful records. Told of the method of examining cases and combating the acidosis. Many times present when not suspected. Thought the formation of calculi in body explained by a condition of acidosis.

J. W. O'Connor called attention to the fact that in acute tonsillitis and other infections after he got the patient under an alkali the patients get better.

G. C. Hall, of Louisville, called attention to the sometimes fatal results and often delayed recovery in patients operated on without preparation due to the development of acidosis. He urged preparatory treatment even in cases of tonsillectomy and protested against it being regarded a trivial operation.

W. J. Shacklette in closing thanked the members for their discussion and urged a better understanding and greater cooperation among doctors so they can work together for results.

P. F. Barbour in closing said that the specialist must broaden out and get his ideas and information from many sources. The physician must go deeper and deeper in his cases.

Practically all diseases produce acid and the body must handle them. The factor of safety is large but body at times needs help. Thinks a better understanding of disease will result from the elaboration of this knowledge. In children the chief cause of acidosis is the excessive fat diet. One should reduce fat and proteids and give more vegetables and carbohydrates. It was a matter of deep regret that some of the members on the program were unable to be present. It was explained by the secretary that these gentlemen had accepted places on the program contingently and that it was understood that their attendance was not certain.

There being no further business, the society adjourned at 3.30 P. M. to meet again in April.

GAYLORD C. HALL, Secretary.

Pulaski—The Pulaski County Medical Society held its regular monthly meeting at Dr. Parker's office on Thursday, December 21st, 1916, at 10 A. M. The following physicians composed the attendance:

Drs. Bolin, Parker, Cain, Baute, Wahle, Norfleet and Alexander.

After reading and adoption of minutes of our last meeting, the society proceeded to business, this being the time for the election of officers, there were no clinical reports or papers read.

The election of officers for the ensuing year resulted as follows:

President, Marion Warren, Science Hill; Vice President, S. F. Parker, Somerset; Secretary-Treasurer, Carl Norfleet, Somerset; Censor, Brent Weddle, Nancy, re-elected; Delegate, Carl Norfleet; Program Committee, Cain, Parker, Norfleet.

A motion was made and carried that Councilor

A. W. Cain and Secretary Norfleet begin arrangements for a district meeting to be held at Somerset. Delegates from various counties of the seventh district are to be present. Meeting to be held in May or June lasting two days. It is expected that Dr. McMullen can be with us to hold an eye clinic at that time.

There being no further business before the society, it was moved and seconded that we adjourn.

CARL NORFLEET, Secretary.

Taylor—The Taylor County Medical Society met in annual session at the Merchant's Hotel, in Campbellsville, December 7, 1916, at 6:30 P. M.

Present, O. M. Kelsay, Reesor, Black, S. H. Kelsay, Heistand, Gowdy, Murphy, and Atkinson.

After a short social session officers were elected for the coming year. President, O. R. Reesor; Vice President, E. L. Gowdy; Secretary-Treasurer, J. L. Atkinson; Delegate, J. L. Atkinson.

The Society then repaired to the banquet hall and partook of a lunch that would satisfy the taste of an epicure.

The program rendered after the lunch was as follows:

Toastmaster, J. L. Atkinson—

He is so full of pleasing anecdote,
So rich, so gay, so poignant in his wit,
Time vanishes before him as he speaks.

Sunshine, C. V. Heistand—

God's in his Heaven,—
All's right with the world.

Shadows, J. B. Buchanan—

Our Willie passed away to-day,
His face we'll see no more;
What Willie took for H_2O
Proved H_2SO_4 .

Medical Intoxication, C. E. Murphy—

Where ignorance is bliss,
'Tis folly to be wise.

Fair and Warmer, S. H. Kelsay—

There's a good time coming, boys,
Wait a little longer.

Experience, O. M. Kelsay—

Ships that pass in the night and speak to each other in passing,
Only a signal shown; then silence again and the darkness.

The program for the January meeting was announced, and after all present had paid their 1917 dues, the society adjourned.

These banquets at our annual meetings are pleasing events in our professional life.

J. L. ATKINSON, Secretary.

Taylor—The day was stormy and the waters high in the creeks so the attendance on the meeting of the Taylor County Medical Society was small. There were present only President

Reesor, Vice President Gowdy, and Secretary Atkinson.

The regular program was continued to the February meeting, and the members present spent a very pleasant and profitable hour in relating personal experiences with certain cases, and methods of treatment, and the interchange of opinions on medical subjects.

Drs. Reesor and O. M. Kelsay were continued as essayists for the meeting February 8th.

J. L. ATKINSON, Secretary.

Warren—The Warren County Medical Society met in regular session December 13th, 1916, Dr. F. D. Cartwright, president, in the chair. The following members were present: Drs. T. W. Stone, J. H. Blackburn, J. M. Adair, F. D. Reardon, J. W. Lewis, F. D. Cartwright, T. O. Helm, J. F. Rodgers, E. N. Hall, J. H. Souther, J. F. South, T. H. Singleton, W. P. Drake, Eldon Stone and H. P. Cartwright.

This being the regular meeting for the election of officers for the ensuing year the Scientific program was dispensed with. On motion of Dr. J. H. Souther, Dr. A. W. White was nominated for President, and the secretary was requested to cast the vote of the society in his favor. The remaining officers were elected as follows:

Eldon Stone, First Vice President; W. P. Drake, Secretary and Treasurer; J. H. Souther, F. D. Reardon, Delegates; J. M. Adair and Hal Neel Alternates; Censors, T. O. Helm, 1 year, J. W. Lewis, 2 years, and T. H. Singleton, 3 years.

The Secretary read a communication from Dr. A. T. McCormack with reference to the franking of morbidity reports, a motion was made, seconded and unanimously carried that the secretary request the State Board of Health to furnish necessary blanks to each physician in the county.

The greatest part of the past few meetings have been business in character. We have about completed our plans for a new schedule of prices, the new one calling for quite an increase over the old rate.

Mr. E. H. Hyman, Secretary of the Bowling Green Chamber of Commerce met with the society and discussed plans and methods of securing a hospital for Bowling Green and Warren county; saying, among other things it should be of vital interest to every citizen of Bowling Green and Warren county. The subject was discussed by the entire membership.

There being no further business the society adjourned.

W. P. DRAKE, Secretary.

Schonlein's Disease.—In the case cited by Meyer and Simon the arthritis, purpura, urticaria and angioneurotic edema occurred at practically the same time.

NEWS ITEMS AND COMMENTS

THE NURSE-ANESTHETIST CASE.

Jefferson Circuit Court—Chancery Branch Division—Louis Frank and Margaret Hatfield, Plaintiffs, vs. Agreed Case, John G. South, C. Z. Aud, I. A. Shirley, C. A. Fish, O. C. Robertson, Geo. F. Fuller, A. T. McCormack and W. W. Richmond, composing the State Board of Health of Kentucky, Defendants.

The plaintiffs, Louis Frank and Margaret Hatfield, and the defendants, John G. South, C. Z. Aud, I. A. Shirley, C. A. Fish, O. C. Robertson, Geo. F. Fuller, A. T. McCormack and W. W. Richmond, composing the State Board of Health of Kentucky, state that there is a controversy between them which might be made the subject of a civil action; that the controversy is real and this proceeding is in good faith to determine the rights of the parties.

The defendants are the duly appointed, qualified and acting members of the State Board of Health of Kentucky.

The plaintiff, Louis Frank, is a duly licensed physician and surgeon and has complied with all the requirements of the law regulating the practice of medicine in Kentucky and has been engaged in the practice of his profession, in Louisville, Kentucky, for more than twenty-eight years; that he limits his practice exclusively to surgery.

The plaintiff, Margaret Hatfield, is a duly licensed or trained nurse and has complied with all the requirements of the law of Kentucky relating to graduate or trained nurses and practices her profession in Louisville, Kentucky. She has had more than six years' experience as a graduate or trained nurse, and has made a special study of the administration of anesthetics in surgical cases, having taken a special course in that subject. She has administered anesthetics in more than twelve hundred surgical cases, but she has never taken an examination or obtained a certificate from the State Board of Health authorizing her to administer anesthetics or authorizing her to engage in the practice of medicine, and she has no license under the laws of Kentucky or any other State which authorizes her to engage in the practice of medicine or any branch thereof.

She is employed by her co-plaintiff, Louis Frank, to administer anesthetics to patients upon whom he performs surgical operations; in each case the anesthetic is administered to the patient by her under the personal directions and supervision of said Louis Frank in so far as it is possible for him to so direct and supervise her work, and he directs kind of anesthetic to be administered; she does not administer anesthetics under any other circumstances or for any other physician or surgeon, and she is paid for her services by said Louis Frank. She has not opened an office or announced to the public in any

way a readiness to treat the sick or afflicted, nor has she ever prescribed for any person or treated any human ailment or infirmity by any method unless the administration of an anesthetic should be so held by the court, but her sole duty is to administer anesthetics as aforesaid.

Some of the medical associations and organizations of physicians and surgeons in the United States, and many hospitals and reputable physicians throughout the United States authorize the employment or employ or endorse and approve the employment of graduate or trained nurses to administer anesthetics to patients upon whom surgical operations are to be performed, and the plaintiffs in this action may show the usual custom as to the administering of anesthetics by trained nurses by letters, affidavits or other writings from the officers of reputable medical societies, hospitals, or from individual surgeons or physicians, and the defendants may likewise show the custom as to the administering of anesthetics in a like manner.

The usual practice in Kentucky in cases where graduate or trained nurses are in attendance has been for such nurses to administer hypodermics of morphia, atropia, ergot and other drugs when the same were directed to be given by the physician in charge, in definite doses and at definite intervals, and frequently this is done in the absence of the physician but according to his order or directions. The administration of anesthetics in surgical cases in Kentucky has been usually performed by physicians, but either party to this controversy may show by letter, affidavit or other writing as to what has been the practice in Kentucky as to others who are not duly qualified and licensed physicians in administering anesthetics.

The usual practice in Kentucky and elsewhere in all surgical cases where a graduate or trained nurse is in attendance is for such nurse to prepare the patients for operation and sterilize the instruments and dressing used in the operation.

It has been the usual practice in Kentucky and elsewhere in cases where a graduate or trained nurse is in attendance for such nurse to administer medicine or drugs prescribed by the physician to the patient.

Upon the foregoing fact the question for determination is:

Is the plaintiff, Margaret Hatfield, practicing medicine or undertaking to practice medicine within the meaning of the laws of Kentucky?

A. J. CARROLL,
Attorney for Plaintiff.

M. M. LOGAN,
Attorney for Defendant.

Dr. Leigh Maupin, who for nineteen years, has been an active and successful practitioner at Magnolia, Kentucky, has built a bungalow in Hodgenville, and after January 15th, his office

will be located in the La Rue National Bank Building, there.

Dr. W. Hamilton Long announces the removal of his office to 907 South Third St., the Weissen-gar-Gaulbert Annex. Dr. Long limits his practice to the administration of anesthesia and analgesia, surgical, obstetrical and dental.

Dr. Samuel Cochran, one of the ablest teachers of medicine Louisville has ever known, died at his home, 1416 South Third street, Louisville, December 17. He was taken ill two weeks before, but had seemed to improve until pneumonia set in. He sank rapidly until the end came.

Dr. Cochran was sixty-five years old. He was born near Meridian, Miss., and spent his boyhood on his father's plantation. He was a student from his earliest years, and when he came to Louisville and attended the old Louisville Medical College he was known as one of the most brilliant students the school had ever known. He was graduated in 1879, and became an interne at the City Hospital.

After serving there he formed a partnership with Dr. Samuel E. Woody, and the close friendship that existed between the physicians, who had been roommates while they were in college, had continued ever since. Dr. Cochran, however, cared more for study than practice, and becoming a member of the faculty of his college, devoted himself to teaching. For twenty-five years he taught anatomy and physiology, and was an authority on these subjects, with a reputation that extended throughout the country.

Dr. Peter S. Gans, for twenty years a prominent physician of Louisville, and well known in Catholic circles, died at his home 1442 South Sixth street, after four months' illness of a complication of diseases.

Dr. E. L. Busby, of Zion, has been appointed by Governor Stanley as assistant physician of the Eastern Kentucky asylum for the insane, at Lexington, and has already received his commission.

After exhaustive tests upon rats, mice and guinea pigs the use of radium as a cure for cancer and tumors has been found to be a failure, according to the annual report of Dr. Francis Carter Wood, head of the Crocker cancer research fund of Columbia University. For cases on which operation is not possible, radium is successful as a palliative only, the report states.

The Clark County Medical Society held a meeting December 12 at the office of Dr. Howard Lyon.

A committee on furnishings for the new hospital was appointed, which consisted of Dr. R. B. Ishmael, chairman; Howard Lyon and E.

R. Bush. It is the duty of this committee to decide upon how the various rooms shall be furnished, and to it shall be submitted requests for special rooms in the hospital. The committee will also have charge of the raising of additional funds.

A medical staff for the hospital was appointed as follows: Drs. J. W. Ishmael, B. F. Johnson, C. G. Stevenson, I. H. Browne, D. H. McKinley and George F. Doyle. This committee will have charge of matters pertaining to the medical department.

Dr. Lyon served an excellent buffet luncheon.

BOOK REVIEWS

Pharmacology and Therapeutics—By H. C. Wood, Jr. The Lippincott Company, Publishers. Price \$4.00.

The name of Wood has long been one to conjure with in this very important realm of medicine. In the Second Edition of this most practical work, Dr. Wood has brought it strictly up to date. In general, the plan of the previous edition has been adhered to, but extensive alterations have been required not only to meet the changes in the Pharmacopoeia, but, also, to keep pace with the rapid advances in the science of Pharmacology. Many new drugs are considered and some of the most important articles have been entirely rewritten. One particular statement made by the author will be received with marked approbation by the profession of Kentucky, i.e., that he does believe that official substances should always be favored by the physician when not to the detriment of the patient.

It is of interest to note that, under minor drugs, Dr. Wood discusses viburnum and puts it in its proper place, in the following words: "These barks have been used in various uterine disorders but there is no convincing evidence that their effects differ from those of any other disagreeably-tasting substance."

The physicians who desire to keep up can not do better than secure Dr. Wood's excellent work.

Constipation, Obstipation and Intestinal Stasis—Second Edition Enlarged—By Samuel Goodwin Gant, M. D., LL. D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus in the New York Post-Graduate Medical School and Hospital. Octavo of 584 pages, with 258 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth \$6.00 net; Half Morocco \$7.50 net.

Modern Medicine and Some Modern Remedies.—By Thomas Bodley Scott, with a preface by Sir Lander Brunton, Bart, F. R. S. Paul B. Hoeber, 67-69 East 59th Street, New York, Publishers. Price \$1.50.

This volume comprises a list of essays under

four topics: First, Disorders of the Heart; second, Arteriosclerosis; third, Therapeutics, Speculations and Doubts; fourth, Chronic Bronchitis and Bronchial Asthma.

Dr. Scott has written concisely and briefly the results of his wide experience and few, if any, will rise from the perusal of this book without knowing something of which they were previously ignorant.

The Diagnosis and Treatment of Heart Disease.

—**Practical Points for Student and Practitioner.**—By E. M. Brockband, Royal Infirmary, Manchester, England. Second Edition with Illustrations. Paul B. Hoeber, 67 East 59th street, New York, Publishers. Price \$1.25.

The author has put forth simply and clearly and in convenient pocket form for clinical reference the elements of cardiac auscultation for the use of the busy doctor.

In its contents chapters are devoted to the following subjects: Routine examination, heart sounds, heart murmurs, septic endocarditis, treatment of cardiac diseases.

International Clinics—A Quarterly of Illustrated Clinical Lectures and Especially prepared Original Articles, Volume iii, Twenty-sixth Series, 1916. J. B. Lippincott Company, Publishers, Philadelphia and London.

This volume contains an article on Gonorrhea in the Male by Henry Tucker, which gives special attention to treatment of acute and chronic cases.

Under the Division of Pediatrics, Dr. B. V. Veeder outlines the technique and value of the Diphtheria Toxin, Skin Reaction (Schick's Test), The Reaction and Its Interpretation and its value to the general practitioner as discussed by the author is of real value to the physician who has encountered diphtheria epidemics.

Subjects on Surgery, Dermatology, Psychiatry and History are also given space in this volume.

American Public Health Protection—By Dr. H. B. Hemenway. The Bobbs-Merrill Co., Indianapolis, Publisher. Price \$1.25.

Chapters on the organization of health departments, preparation of officials, social and economic conditions, medical and sanitary education, medical health agencies and a comprehensive introduction are the author's answer to the two questions which he asks in his preface:

"How can we arouse the people to a realization of their unselfish interest in efficient public health administration?"

"How can they be made to see that this does not mean the enactment of any statutes and ordinances but the employment of special trained executives?"

The book is readable and interesting, and treats of public health as a new profession, as well as a new science.

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EDITORIAL

THE COUNTY HEALTH OFFICER.

In his report to the Rockefeller Commission for the Eradication of Hookworm Disease, Dr. Charles Wardell Stiles of the U. S. Public Health Service, and the discoverer of hookworm in this country, has this to say regarding the county health officer: "During the twenty years that I have been engaged on a study of practical health problems in this country, the fact has forced itself on me that the county health officer is theoretically the most important and practically the weakest point in the entire public-health organization of the United States. Some of our counties have excellent county health officers, but in the vast majority of cases the men are underpaid for the work, and they, therefore, do not perform their duties properly; for the support of their families they are dependent on their private practice among the people over whom they are called on to exercise police powers, and as a result these powers are not exercised; too often the position goes to the 'lowest bidder,' and too often it goes to a political appointee, technically totally unfitted for the work. To use a comparison, the county health officer may be compared with the sheriff or the local police, while the federal health authorities may be compared with the U. S. Army. To-day there is a tendency to demand that the federal public health service be increased. Much as I approve of strengthening the federal service, as a member of that service I feel convinced that the average citizen does not fully appreciate the fact that this service can not possibly make up for the present inefficiencies of the mass of our county health officers. We might just as logically expect that an increase in the standing army of the United States would obviate the necessity of having county sheriffs or local police as to expect the federal public health service to obviate the necessity of appointing and equipping proper local and county health officers. Speaking from an experience of twenty years' work in federal service, with a considerable portion of this time spent in actual

field work in many different States, I can not escape the conclusion that the most important single problem in public health organization in our country is at present centered in the question of the county and local health officer rather than in Washington, and I wish to add all the emphasis in my power to that part of the report of the administrative secretary which deals with this point. If the counties in our Gulf-Atlantic States had active, properly trained health officers, this commission would not be able to find any work there to enable it to carry out its trust, and I know of no way by which we can more quickly finish our work, and thereby render ourselves useless, than by encouraging the development of a thoroughly efficient system of county health officers."

THE VITAL STATISTICS VOUCHERS.

In order that the doctors may receive their vouchers in time to be included in the April levy of the Fiscal Courts, the Bureau of Vital Statistics is compelled to close the books with the November reports. This means of course that December reports will appear on the next year's voucher. This complication and delay could have been obviated if all doctors had promptly reported births within ten days. Regardless of the fact that the Bureau has so frequently called their attention to this provision in the law, so many practitioners wait until a number of births have accumulated before reporting. A recent investigation has disclosed the fact that a large percentage of the physicians are not aware of the existence of the supplemental report blanks. A supply of these should be secured with every order of certificates and one be left at the home where a birth occurs and name is not available to make out a report at time of birth. This supplemental blank could be filled in by the mother and sent to local registrar as soon as the child is named. It is urged by the Department that every physician form the habit of filling in the certificate immediately following accouchement and of sending them to the local registrar before the 10th of each month.

CORPUS LUTEUM.

It is very important that Corpus Luteum preparations should be manufactured with physiological exactitude. The cases in which it is used should be carefully selected. The indications for its administration are distinct and it is useless in other conditions. It is essential that it be gotten from the ovaries of pregnant animals, and when so obtained, its administration is followed by definite phenomena. Two to five grain doses should be administered. It should never be administered unless you can have the patient under such constant supervision that you can take her blood pressure daily. Under no circumstances, should it be continued when the blood pressure is below 90 m.m., and it should not fall more than 15 m.m. below the patient's normal pressure.

In our advertising pages from time to time, we will have something to say about Corpus Luteum. It is a preparation that is well worth the careful study of the thoughtful physician.

DIPHThERIA QUARANTINE.

They do things well in Hardin County. Some child at Stithton had diphtheria, and when the father refused to obey the orders of the Hardin County Board of Health in regard to quarantine and fumigation, Dr. Allen took out a warrant before the County Judge, Hon. J. W. Rider, who fined the culprit \$20.00.

It is always a matter of regret to have to fine a man whose family has been sick, but the man who distributes contagious diseases is as much of a criminal as if he distributed poison, and we desire to congratulate Dr. Allen and Judge Rider for making this plain to the people of Hardin County.

FROM AN ABSENT FRIEND.

In the Forum this month we are publishing a letter from Dr. Cyrus Graham that everybody will enjoy reading. Dr. Graham's friends and foes alike will join the Editor in the hope that his convalescence will be rapid. He never said an unkind word that wasn't prompted by some other man's misdoings or his own indignation. We never heard him say even an unkind word that wasn't constructive in its last analysis. The esteem in which Dr. Graham is held by his friends in Kentucky must go a long way towards rewarding him for the almost too much of himself that he gave to the profession and people of Kentucky, and we hope before long to see him restored to the profession of which he was an ornament, and to the people who love to honor him and make him feel happier.

SCIENTIFIC EDITORIALS.

INTRA-TRACHEAL ANESTHESIA.

Anesthesia by intra-tracheal insufflation; i. e., the method whereby the anesthetizing agent is conducted to the lungs by a tube passing through the larynx and well into the trachea, has recently gained considerable vogue and has been used almost as a routine method in some clinics. Its very satisfactory action, together, it is to be feared, with its novelty and the spectacular effect, of the somewhat complicated apparatus necessary, have influenced some surgeons and anesthetists to overlook some important dangers. The method is one of value in selected cases, but is never indispensable, and its indiscriminate use is to be condemned.

We should hesitate to decide upon a technic of administration which adds to the ever present danger of the agent itself, and it can be readily seen that the insertion of a tube into the windpipe almost to its bifurcation, and the pumping through it if the ether vapor is a proceeding from which fatal or permanent emphysema, and lung rupture may result. That these unfortunate sequelae have resulted all too frequently in proportion to the total number of intra-tracheal administrations is a matter of record. That they have been invariably due to errors of technic and accidents to the apparatus is small consolation. We are depending upon mechanical devices for our safety. We are entrusting our patients' life to a mercury manometer. The human mind is not infallible, nor can any of its products be. Accidents will happen. Failure, through hurry, or mental abstraction carefully to observe all the parts and connections of the apparatus beforehand, may result in a death.

In one reported case, the tube from the ether container of the apparatus slipped down till its end was submerged. When the tracheal tube was introduced and the apparatus started, pure liquid ether was forced into the lung. In three fatal cases emphysema or lung rupture from too great pressure was the cause. Hence, remembering that no mechanical device is accident proof, and that no mind is proof against carelessness, forgetfulness or mistakes, we must withhold any great enthusiasm for a technic which shows seven deaths in 1400 administrations and we must reserve such a method for those cases of intra-thoracic surgery where mechanical inflation of the lung is advisable to prevent collapse from the pressure of the outside air when the chest is opened.

For operations about the face, mouth, neck and head in general where it is convenient to have the anesthetist at a distance we have the

almost equally efficient intra-pharyngeal method, using the naso-pharyngeal tubes, oral-pharyngeal tube, vapor conducting gag, "Cheek hook," and other devices for conducting and discharging the vapor well down in the pharynx from where each inspiration carries it into the lungs with little waste.

W. HAMILTON LONG.

RENAL TUBERCULOSIS.

While we believe that genito-urinary tuberculosis is always secondary, and that it may occur in any part of the tract, its mode of extension is not fully agreed upon. Most authorities, however, state that it is possible for the infection to reach the kidney, which is the most frequent site of genito urinary tuberculosis, through three avenues: first, by the blood stream which is the most common route; secondly, by ascending from the bladder through the ureter; and, thirdly, by extension through the lymphatics.

The infection is frequently from some obscure and often unrecognized lesion; as, a tuberculous of the epididymis, seminal vesicles, and prostate, and in the female to tuberculosis of the genital organs. It occurs in about three-fourths of the cases before forty years of age, and almost two-thirds of the total number of cases are in males.

In the majority of cases, the infection is hematogenous; the lesion beginning in the cortex of the kidney, usually in the upper pole, in the form of miliary tubercles which enlarge and coalesce. With the engrafting of secondary infection on these areas of caseation we have more or less extensive pyonephrosis, and destruction of kidney substance. Later, the process involves the calices and pelvis of the kidney liberating the infectious material into the urine. At times the destruction of kidney substance is complete; forming a single large abscess, the walls of which are composed of the thickened kidney capsule and may leave no sign of the original lesion, giving us the so-called "dead kidney."

Since primary tuberculosis of the bladder is so extremely rare, little need be said regarding ascending infection as a source of renal tuberculosis. From the pelvis of the kidney, the tubercle bacilli probably reach the cortex through the straight tubules, and produce the same lesion as in the hematogenous infections.

The progress of the disease is usually slow, and there may be little or no impairment of the general health for many months or even years, while in some instances of acute miliary tuberculosis there is rapid and extensive destruction of the organs within a few weeks. In 80 per cent. of patients with tuberculosis of the kidney, according to Balfour, the disease is confined to one kidney, but autopsy

statistics show both kidneys to be involved in 75 or more per cent.

Tuberculosis of the kidney may exist for many years without giving rise to any characteristic renal symptoms. Irritability of the bladder is usually the first and most constant symptom of renal tuberculosis, although in many cases attention of the patient is brought to his condition by a sudden attack of pain in the kidney region or a hematuria. With the onset of secondary infection there is fever from absorption, pain, and disturbed rest; followed by loss of appetite, weakness and emaciation. Polyuria is an early symptom. At first, the urine is clear and of low specific gravity, but later cloudy from the presence of pus or blood. Vesical tenesmus comes with involvement of the bladder mucosa. It is often accompanied by expression of a few drops of blood at the end of urination, due to invasion of the trigone. Enlargement of the kidney may be sufficient to palpate in the loin as a tender tumor.

Since other conditions give us some of the more or less classical symptoms of renal tuberculosis, its diagnosis becomes largely a question of finding the tubercle bacilli. After a carefully taken history and complete physical examination, the patient should be subjected to cystoscopic and other methods of differential diagnosis. At times a skiagram of the urinary tract is invaluable in ruling out stones, and other conditions. Cystoscopy enables us to determine the presence or absence of cystitis, and its severity, the condition of the prostate and ureteral orifices, the presence of stones, and of tumors and other lesions of the bladder wall.

By means of the ureteral catheter we can explore the ureter for stone or stricture, and determine the amount and character of urine coming from each kidney. It enables us to collect the urine from both kidneys for microscopic examination for tubercle bacilli and other microorganisms, and for applying the phenolsulphonephthalein test of Rowntree and Geraghty for determining their functioning power.

Occasionally, it is impossible on account of pain, marked contraction of the bladder, extensive ulceration of the mucosa, blood clots, granulation tissue, etc., to determine definitely by cystoscopic examination whether or not both kidneys are involved and the extent of disease in each. In such cases, cystoscopy should be attempted under general anesthesia. In extreme cases, the ureters may occasionally be catheterized directly by means of a suprapubic cystotomy. Another plan is that of Rovsing, of exposing both kidneys at operation to decide on the one most diseased. This method is uncertain, and may result in removal of the better kidney.

Braasch and Thomas, by careful microscopic examination of the centrifuged urinary sediment, are able to find the tubercle bacilli in four out of five cases. Animal inoculation should be resorted to when they can not be found microscopically. The objection is, that it takes about five weeks from the time of inoculation to produce typical tuberculous lesions in the guinea pig. Morton, of the Massachusetts General Hospital, has lately shown that it is possible to cut the time to eight or ten days by lowering the resistance of the guinea pig by the Roentgen ray administered either shortly before or after the inoculation of the material to be tested. Unfortunately, this is practical only in well equipped laboratories.

The spontaneous cure of tuberculosis of the kidney is still a disputed point. We know that the ureter becomes closed at times, preventing the irritating and infectious discharge from the diseased kidney from reaching the bladder. This may be followed by a symptomatic cure, but is a constant menace to the patient. Non-surgical methods of treating renal tuberculosis, such as tonics, tuberculin, fresh air and diet, etc., offer very little in the way of permanent cure.

About 90 per cent. die within five years of the onset of symptoms when treated by other than surgical methods. In inoperable conditions, in which the kidney lesion is merely part of a general miliary tuberculosis; and in cases in which both kidneys are too badly diseased to permit of a nephrectomy, the patient should have the advantage of non-operative treatment.

A quiescent tuberculous focus in the lung, epididymis, etc., or even the other kidney, provided it is capable of doing the work, does not preclude nephrectomy. After the disease has been accurately located, nephrectomy should be done at the earliest possible moment. Delay increases the possibility of secondary infection and greatly reduces the chances of obtaining prompt and complete relief. The operative mortality in the hands of those doing a large amount of this work is from 3 to 5 per cent. with 60 to 70 per cent. of cures. About 15 per cent. of cases, operated upon after the ureter and bladder became involved are not relieved of their distressing bladder symptoms.

Two points to be emphasized are: (1) All cases of persistent diurnal bladder irritability that do not respond readily to the ordinary methods of treatment, such as lavage, internal medication, etc., should have a thorough examination to ascertain, if possible, the causes of such symptoms; and, (2) the importance of early operation.

GUY AUD.

THE EFFECT OF TREATMENT ON THE WASSERMANN.

There have been appearing of late in various medical journals articles by different observers on the results of treatment on the Wassermann reaction. As far as concerns the ability of what is considered the most effective treatment to render the blood Wassermann-negative, their findings have been most discouraging. While in some cases even a moderate course of treatment will cause the reaction to become negative, the majority of cases reported in the aforementioned papers were quite resistant. A combination of intravenous Salvarsan injections, a half-dozen in full dosage, with mercurial inunctions and injections, would seem to be most thorough treatment whether from the standpoint of the staunch Salvarsan adherents or the pure mercurialist or the believer in arsenical and mercurial treatment combined. Yet even such methods fail, according to these statistics, to produce a constant negative. Either the Wassermann cannot be made negative, or even if rendered negative it becomes positive again after a few months. If we believe that a persistent positive Wassermann is a sign that there is still a leucic infection then we must admit that not only does mercury possess but feeble anti-spirochetal powers, but that Salvarsan is no better. Those who hold that Salvarsan only clears up the surface manifestations of syphilis,—and such authorities as Gaucher and Zeleny belong to this group—point to its feeble power over the Wassermann as proof of its failure as a *sterilisans magna*, and even doubt whether it has any real value. It has been frequently stated that the large numbers of cases of latent leucic infections of the nervous system which we now see are due to the inefficient methods of treatment of primary and secondary syphilis in vogue in the past before the days of Salvarsan. Now Neisser, Fournier, Zeleny, Baucher and others come forward with the statement that those patients who have received Salvarsan treatment are very apt to have recurrences, especially of a neuro-recidival character. It may be that there is really no larger percentage of leucics showing recurrences, but that keener and more careful diagnosis of these conditions now throws into the leucic class pathological conditions formerly not so recognized.

During the first few years after the introduction of Salvarsan the majority of physicians who used it, even those of conservative type, became Salvarsan enthusiasts through the observance of its truly remarkable action in causing the disappearance of clinical manifestations, especially the skin lesions of the second stage. A patient covered with large syphilides would become entirely clear in 24

to 72 hours; mucous patches healed as if by magic; even hard indurated gummatous nodules melted away in a matter of hours. Yet soon, instead of the one intravenous injection, two were advised; then two with a course of mercury; next three or four with intensive mercurial treatment for a month following each injection. No, we are advised by one group to give several intravenous injections in quick succession, so as to get an overwhelming action on the spirochetes, following this up with several months of mercury, while another group recommends alternating courses of vigorous mercurial treatment by inunction and injection lasting 4 to 6 weeks, with intravenous injections of Salvarsan, keeping this up until the Wassermann becomes negative, even if a dozen or more of the intravenous Salvarsans and mercurial courses are necessary to produce such a result. Why is the treatment continually lengthened, made more vigorous?

The conclusion seems plain. Either Salvarsan is a failure and mercury not much better in treating syphilis or we are regarding the Wassermann reaction in the wrong light. Why not the latter? Nearly all cases of healed tuberculosis will give a positive Von Pirquet; the blood of patients who have had typhoid or the anti-typhoid vaccination possesses agglutinative action for many years. What proof have we that the Wassermann may not remain positive after the infection is entirely overcome? To clear this point we should have a large number of cases observed over a long period of years; they should be classified as follows: cases treated with, and cases treated without Salvarsan, in which the Wassermann became negative and remained so during the rest of the patients life, without the patient ever showing any clinical manifestation; persistently negative Wassermans which developed clinical symptoms after many years, with observation of the change in the serological reaction, if any; patients with persistently positive Wassermans, divided as to length and character of treatment, who have not shown signs of recurrence or relapse; persistently positive cases similarly divided in respect to treatment, who have had recurrences; a fifth group composed of cases whose reaction has changed from negative to positive, with observations on the connection of such changes with clinical manifestations, that is, whether a relapse or lighting up of a latent focus tends to cause the reappearance in the blood of the substances which cause a positive Wassermann reaction. Such tables as these would give us a tangible valuation of Salvarsan; if it is of use only in clearing up surface manifestations without any permanent anti-luetic effect this would be brought out; if it is a powerful agent in the treatment of syphilis these figures would show it. More-

over, by comparing the figures thus obtained we would gain a real insight into the true character of the Wassermann reaction and its importance as an indication of the value of a method of treatment. We must remember that valuable as the Wassermann is in diagnosing primary and secondary syphilis and as an aid in determining whether syphilis was ever present in a given case, yet this value is based on statistics only. From the scientific viewpoint, we do not know to what it is due. It does not follow our theory of antigen-antibody-complement union, therefore we cannot reason from theory or analogy whether or not it may persist in the blood after all spirochetes have disappeared from the body. We repeat, whatever knowledge we have gained from the Wassermann reaction is due to statistics only; whether knowledge we are yet to gain in all probability must come in the same way, from carefully gathered statistics.

M. L. RAVITCH AND S. A. STEINBERG.

Importance of Counting Pus Cells in the Urine.

—According to Block and Nyon (So Med. Jour.) it is of importance to count the pus cells in the urine.

Their method is as follows: The specimen of urine is gently stirred or agitated so that the solid and liquid portions are thoroughly mixed and a drop is immediately taken and placed upon an ordinary blood counting chamber and covered with a cover glass and counted, just as in counting leucocytes in the blood. The reports are then made as to the number of pus cells to 0.1 c.mm. or 1.0 c.mm. as desired.

The value of this method of reporting the number of pus cells is evident, as it conveys at once an accurate idea of the actual number of pus cells; it enables both the examiner and others to compare the specimens taken at different times from the same case and determine whether the patient is getting better or worse; it gives an accurate evidence of the value of different forms of treatment; it gives a clear idea at once as to whether the pus cells come from the bladder or urethra in the three-glass test; or from the urinary or genital tract in women by counting the pus cells before and after a douche (and thorough cleansing); and it avoids the danger of catheterization to determine this point.

Pyocyanus Disease.—P. L. Bosellin (Giornale italiano delle malattie veneree e della pelle, September 20, 1916) reports a case of pyocyanus infection with destruction of tissue on the anterior aspect of the left wrist in a woman of forty-six years. This disease in the newborn and adult is a definite morbid entity with multiform clinical aspects, and the diagnosis should be aided or cleared up by laboratory examination when the clinical evidence is insufficient.

ENTHUSIASM

ENTHUSIASM is the *dynamics* of your personality. Without it, whatever abilities you may possess lie dormant; and it is safe to say that nearly every man has more latent power than he ever learned to use. You may have knowledge, sound judgment, good reasoning faculties; but no one—not even yourself—will know it, until you discover how to put your *heart* into thought and action.

A wonderful thing is this quality which we call enthusiasm. It is too often underrated as so much surplus and useless display of feeling, lacking in real substantiality. This is an enormous mistake. You can't go wrong in applying all the genuine enthusiasm that you can stir up within you; for it is the power that moves the world. There is nothing comparable to it, in the things which can be accomplished.

We can cut through the hardest rocks with a diamond drill and melt steel rails with a flame. We can tunnel through mountains and make our way through any sort of physical obstruction. We can check-mate and divert the very laws of Nature, by our *science*.

But there is no power in the world that can cut through another man's mental opposition, except *persuasion*. And persuasion is reason plus enthusiasm, with the emphasis on enthusiasm.

Enthusiasm is the art of high persuasion.

If you would like to be a power among men, cultivate enthusiasm. People will like you better for it; you will escape the dull routine of a mechanical existence and you will make headway wherever you are. It can not be otherwise, for this is the law of human life. Put your soul into your work, and not only will you find it pleasanter every hour of the day, but people will believe in you just as they believe in electricity when they get into touch with a dynamo.

And remember this—*there is no secret about this "gift" of enthusiasm*. It is the sure reward of deep, honest thought and hard, persistent labor.

J. OGDEN ARMOUR

ORIGINAL ARTICLES

THE DETECTION OF EARLY PULMONARY TUBERCULOSIS.*

By EVERETT MORRIS, Oak Forest, Illinois.

(Resident Physician Cook County Tuberculosis Hospital.)

When I was asked to prepare this paper I immediately replied that the subject was an old one and that there was very little new clinical knowledge to offer the general practitioner. I accepted the honor, however, with the hope that I might be able to encourage some who are trying to discover pulmonary tuberculosis as soon as it is diagnosable, and to point out to others the futility of visualizing the Hippocratic clinical picture of tuberculosis. The purpose of this paper, therefore, will be to bring to the family physician a practical outline which requires only the application of the common, every-day methods of diagnosis. I shall not belittle the importance of the X-ray or the many modern laboratory methods used in the discovery of early phthisis.

One of the brilliant achievements in medical science was the discovery of the tubercle bacillus by Robert Koch. Unfortunately this date also appears to be the beginning of decadence in the art of interpretations of pathological conditions in the lungs, especially in tuberculosis. This decline has continued until the practitioner stands indicted in the records of any modern tuberculosis institution for gross errors of omission.

The anti-tuberculosis organization is not in the hands of the medical profession. This organization is demanding that the Hippocratic picture of tuberculosis be relegated to the museum and that a new mental picture of tuberculosis in the curable stage be made the standard for comparison. It is also demanding that early tuberculosis be recognized and criticises the physician who makes chest examinations through the clothing and gives a diagnosis of "bronchitis," "cold," "malaria," "stomach trouble" and even "typhoid," without first carefully considering tuberculosis. The medical profession should see to it that medical matters stay in the hands of medical men. To gain and maintain a high standard of efficiency it will be necessary for us to devote more time and more study to the early manifestations of this disease.

To make an intelligent search for early pulmonary tuberculosis it is necessary to keep in mind the pathology of the tubercle. The National Association for the Study and Pre-

vention of Tuberculosis, has adopted the following definition of incipient tuberculosis:

"Slight or no constitutional symptoms (including particularly gastric or intestinal disturbance or rapid loss of weight); slight or no elevation of temperature or pulse at any time during the twenty-four hours; expectoration usually small in amount or absent; slight infiltration, limited to the apex of one or both lungs, or a small part of one lobe; no tuberculous complications."

The word "incipient" as applied to the disease is misleading. The earliest clinical evidences of the disease are the result of a number of acute exacerbations and periods of inactivity in and around the original focus of infection. The term, therefore, early tuberculosis, may be applied to a process quite chronic.

Tuberculosis is essentially chronic, consequently there is no demand for a hasty diagnosis. Several examinations may be necessary before arriving at a definite conclusion.

The building of a correct diagnosis with many seemingly dissociated historical facts, present and past symptoms, and present physical signs, remind one of the picture puzzle which when disarticulated presents a mass of confusion, but when fitted piece to piece makes a complete and beautiful picture.

HISTORICAL EVIDENCE.

A. *Facts Previous to Consultation.*

(1) Exposure to massive infection of the tubercle bacilli during early childhood—the result, tuberculous infection or tuberculous disease?

(a). Conditions: breast fed; number in family; number of wage earners; quality and quantity of food; number of rooms, their size; amount of ventilation; diseases in childhood and their results, including "scrofula;" enlarged tonsils, adenoids and discharging ears; school life, or any interruption in health following such unaccustomed responsibilities as the first position necessitates, or entering business or college or the marriage responsibilities.

(2). Direct habitual exposure to massive infection of tubercle bacilli from consort, or consort's family, fellow workman, etc.

(a). Occupation, environment and number of working hours; personal habits when off duty, with special reference to the use of alcoholic stimulants.

B. *Facts Referable to Present Illness.*

(1). First demonstrable evidence of disease.

It is always important to get a definite idea as to the beginning of the present illness. The intelligent patient can usually remember when he was last well. To fix the memory on

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

dates I find it profitable to ask, "Were you perfectly well last Christmas or on the Fourth of July?" etc.

The detection of early pulmonary tuberculosis is not limited to the individual presenting his physical self for a physical examination. The trail of the germ is too intricate and too far reaching not to warrant the closest scrutiny into the possibilities of infection, from whatever source, but especially from open cases in his own home during infancy, or, in that of some well-intentioned neighborly soul who suffered from chronic fibroid phthisis but who was able to "mind" all the infants in the neighborhood and incidentally infect them.

A thoroughly prepared history embracing the subjects already mentioned should be to a careful, systematic and critical physician what a blue print is to the master-builder. The results of minute details in history-taking often reveal a truth which if followed in its logical sequence will lead to a correct diagnosis. The family physician is eminently fitted from additional personal knowledge of the family taints and weaknesses, to correlate historical data unattainable by others. The medical man earnestly seeking to discover the clinical cause which brought the patient to his consultation-room can ill afford not to investigate and record the past and present personal history. Landis¹ says, "From the history alone the vast majority of cases of early tuberculosis can be recognized or the presence of the disease strongly suspected."

ETIOLOGIC CLASSIFICATION OF SYMPTOMS.

A. *Toxemia.*

(1). Malaise, lack of endurance, loss of strength, nervous instability, lack of appetite, digestive disturbances, loss of weight, rapid pulse, night sweats, temperature, anemia and headache.

B. *Reflex Action.*

(1). Hoarseness, tickling in larynx, cough, circulatory disturbances, loss of weight, chest and shoulder pains, flushing of face and apparent anemia.

C. *Tuberculous Involvement per se.*

(1). Frequent and protracted colds, spitting of blood, pleurisy, sputum and temperature.

The group of symptoms due to the toxic effects of the tubercle bacilli may be found in several other pathological conditions. They are, therefore, not distinctive of early pulmonary activity, but when several are encountered along with a number of other more reliable symptoms and signs they will then find their place in the puzzle.

The most reliable symptom in this subdivision is pyrexia, one that no physician seeking a diagnosis will overlook. Fishberg³ says: "There is no case of early phthisis free

from fever at some time." The importance of this one symptom can be judged from the words of a business man: "An insurance director once made the statement that given an accurate observation of temperature on each of three successive days between the hours of 3 o'clock and 8 o'clock P. M., and excluding all risks that showed a temperature of 99.4 degrees or above at each examination, he would reduce the subsequent mortality from tuberculosis to a greater extent than through the employment of the most careful physical examination⁴."

The pre-menstrual rise has no clinical value. A sub-normal early morning temperature is suggestive.

Another very early and also a very constant symptom is "that tired feeling." Dyspepsia and a distaste for breakfast seldom suggest an examination of the lungs, although they are nearly always present during the early stage of phthisis.

Another symptom in early pulmonary tuberculosis is an interference with the normal vocal apparatus causing slight hoarseness and voice fatigue, especially after loud talking or singing. The voice may become husky with a dry, tickling sensation which produce a clearing of the throat or a hacking cough. In purely apical involvement this may be explained by reflex irritation of the vagus fibers in the lungs. I have often noticed that following a deep breath, almost invariably an early case will involuntarily cough.

"Neuralgia" and "rheumatism" may often be explained by reflex action.

Some French authors claim that the irritation of the sympathetic will produce inequalities of the pupils which may precede, for several years, the manifest symptoms of the disease⁵.

The symptoms caused by the tuberculous process are the ones which usually call the patient's attention to his indisposition. Unfortunately, too, a goodly number of busy medical men do not take the time or trouble to investigate thoroughly the history and the early symptoms caused by the toxic products of the tubercle bacilli, or the danger signals flashed by the nervous mechanism, but wait for some tangible evidence, as blood-spitting, before seriously considering tuberculosis as a diagnostic possibility. "The value of a well-marked hemoptysis is so great as to make this symptom when well authenticated and other causes can be excluded, well-nigh pathognomonic of tubercle⁶."

"Practically all pleurisies, wet or dry, of idiopathic origin, are tuberculous⁷."

Brown⁸ says, "Symptoms are a better and a more accurate guide to activity than physical signs."

After carefully searching the files of the Cook County Tuberculosis Hospital for incipient cases as defined by the National Association for the Study and Prevention of Tuberculosis, I am able to report on only ninety-six cases out of a total of three thousand six hundred and fourteen.

TABLE I.

Order in which single symptoms first appeared:

	Symptoms						
	1st	2nd	3rd	4th	5th	6th	7th
Loss appetite....	5	1	2	0	0	0	0
Loss strength....	2	0	0	1	0	0	0
Loss weight.....	3	3	4	0	0	0	0
Cough	15	6	1	1	0	0	0
Fever	2	1	1	0	1	0	0
Night sweats	1	2	3	2	0	0	0
Chills	0	0	8	1	1	0	0
Hoarseness	3	1	3	1	1	0	0
Rapid pulse	0	2	0	0	0	0	0
Hemorrhage	0	2	0	0	0	0	0
Spitting blood...	3	2	3	2	2	0	0
Shortness br'th...	2	2	2	0	0	0	0
Pain in chest....	1	0	1	1	1	1	0
Pleurisy	4	0	0	0	1	0	0

TABLE II.

Two or more symptoms occurring at the same time:

	Symptoms						
	1st	2nd	3rd	4th	5th	6th	7th
Loss appetite....	25	34	28	38	15	13	13
Loss strength....	15	27	26	15	9	11	7
Loss weight	4	7	8	6	5	2	3
Cough	1	0	2	1	3	4	3
Fever	0	0	1	1	0	0	0
Night sweats	0	1	0	0	0	0	0
Chills	0	0	0	0	0	0	0
Hoarseness	2	9	3	8	13	16	12
Rapid pulse	4	2	2	10	10	15	6
Hemorrhage	1	1	2	1	3	3	5
Spitting blood...	1	0	0	1	2	1	1
Shortness br'th	0	0	1	2	0	0	0
Pain in chest	0	0	1	1	0	0	0
Pleurisy	0	0	0	0	0	0	0

PHYSICAL EXAMINATION.

The correct interpretation of abnormalities in the chest, as the result of the growth of the Koch bacilli and betrayed by slight impairment to the normal mechanism within and without the thorax, requires the use of practical details not surpassed by the surgeon. It is the business of the internist to dignify the examination of the chest. This can be done by making it an event in the patient's life by emphasizing the importance of the examination to the patient and by making it exhaustive. To make the right kind of an impression it is necessary to be equipped for

this delicate work. The first requisite is a quiet and comfortable examination-room containing two revolving-top stools, a small table on which are one week's record of temperature and pulse taken every two hours during the day, and in doubtful cases every four hours during the night, a good stethoscope, a complete set of examination blanks, a skin pencil, tube of vaseline for hairy chests, a tape, a package of folded paper napkins and a table of standard weights according to height. There should be convenient a pair of good scales; also some means of measuring the height. The examination room should be well lighted, preferably a northern exposure and the examination done early in the morning as the examiners faculties are clearer and certain adventitious sounds may be audible which are not so easily detected later in the day.

The patient, stripped to the waist, without any obstruction to the movements of the diaphragm and facing the window, should be placed on one of the stools several inches higher than the one used by the examiner. I find that a little platform built around the base of the stool, about six inches high and six inches wide, makes the patient much more comfortable and that it also helps to relax the abdominal muscles, thus allowing such movements of the diaphragm as are possible. In the normal chest the excursions of the diaphragm on the right are a trifle higher than on the left, due to the liver acting as a fulcrum. For good work patients and physician must be comfortable.

A valuable part of the physical examination is the consideration of the relaxed attitude, general development, including nutrition, teeth, gums, high angular palate, glands, eyes, pupils, and a comparison of the present with the standard weight. The type and deformities of the thorax; bulging or cupping of the superclavicular fossæ, due to spasm of the over-lying muscles and the restriction of the diaphragm on the corresponding side, all point to the location of the trouble.

It is of some importance to determine the circumference of the chest, as it is equal to one-half the height in a normal adult. By this method a weak and predisposition chest may be discovered. Minor⁹ contends that the semicircumferences, measured from a point in the mid-sternal line opposite the level of the fourth ribs and the eighth dorsal spine, is of considerable value and should always be sought since slight deviations in the sides may be detected. Whether the patient is right or left handed must be taken into consideration.

The slight changes in the percussion note over small infiltrated areas require much dexterity in their production and much experience in their translation. The employment of

a light percussion stroke is of paramount importance. Percussion is best done when patient is relaxed with hands hanging by side. A mistake is often made when percussing posteriorly by having the hands of the patient placed on the opposite shoulders. This produces taut muscles and necessarily changes the percussion note. As the left lung is a little less frequently involved and as the lower lobes are seldom the seat of the primary focus it has been found advisable to percuss from over healthy tissue to the area more vulnerable. For this reason it is best to begin percussion at the base of left lung in front, going upward over each interspace. The same method should obtain posteriorly. After the right has been done, compare corresponding lung areas, keeping in mind the physiological increase of resonance over the right apex due to the nearness of the trachea and enlarged right bronchus.

I have found it always wise to percuss the clavicles direct.

To outline Kronig's areas of apical resonance requires dexterity which comes after much practice. The results, however, point with considerable accuracy to the crippled apex.

The "seats of election"¹⁰ are over the apices of the upper and lower lobes. Babcock¹¹ emphasizes the fact that the initial lesion in the majority of cases is to be found in the posterior aspect of the apex. St. Chauvet describes the "alarm area" as "lying midway on a line drawn from the space between the seventh cervical and the first dorsal spinous process to a tubercle found on the spine of the scapula about the junction of its inner and middle thirds."

TABLE III.

Location of Disease.

Rt. Apx.	Lft. Apx.	Rt. and Lft. Apices	Rt. hilus.	Lft. base up. lobe
40	32	22	1	1

After locating any impairment to percussion, mark area with skin pencil.

By the time one is ready to auscultate the chest a very presumable clinical picture may be made—a few more blocks are missing in the puzzle but their location is definite. While the suspicious area is before us we also remember the peculiar breath sounds of the right apex. These, with the hyperresonance sometimes found over areas of emphysema, the result of the compensatory activity of the normal lung tissue overlying a diseased focus, are the rocks upon which many a diagnostic craft is wrecked. The right apex phenomenon lies chiefly in the fact that the inspiratory and expiratory notes are higher

pitched and harsher than in the left apex. This is much more noticeable in expiration and since it is louder it necessarily is prolonged. Before applying a stethoscope see that no deceptive sounds are made in the upper air passage.

The same route should be followed in auscultation as in percussion. It will be found helpful first to listen over the chest only to the breath sounds during quiet and then moderately deep breathing. The separate study of the inspiratory and expiratory notes over corresponding sites in opposite interspaces will be found distinctly helpful.

Probably the first abnormality we get over an infiltrated area is the granular type of respiration which transmits a rubbing, grating inspiratory note. It has been noted that in whatever kind of abnormal breathing, the inspiratory phase is the first to be disturbed. The prolongation of the expiratory note is very reliable but like all changes, to be of value, they must be localized to a small area of lung tissue, almost invariably located at the "points of election" and be constant at more than the initial examination.

Sewall and Childs¹² have justly called attention to the distinctness with which the whispered voice is conducted through an early tuberculous focus.

After listening for breath changes it is well to investigate for adventitious sounds. These may be heard during either stage of breathing already mentioned. The progress of the disease being somewhat determined by their quality and quantity with reference to the kind of breath sounds employed when heard. They, too, must follow the rules laid down for breath changes to be of value.

The initial rale is dry and is not usually heard during ordinary or forced respiration, but is brought out after a cough or a series of short, hacking coughs at the end of expiration as suggested by Bray¹³. The sibilant and sonorous rales are also heard in early cases.

Such deceptive adventitious sounds as the collapse and muscular rales, shoulder-joint frictions, rales produced by the bell of the stethoscope on a hairy chest, and the fine friction rales of apical pleurisy are to be ruled out. The latter, however, have a diagnostic meaning.

It is not necessary to wait for rales to diagnose a case with a history of sufficient exposure to the tubercle bacilli; with some predisposing and exciting factors during the period of latency; with few or many symptoms; with an asymmetrical chest; with slight impairment or hyperresonance and some change in the breath sounds over a "seat of election," the diagnosis is no longer tentative and no

physician needs to wait for further clinical or laboratory evidence.

The use of tuberculin for diagnostic purposes is potent of much harm.

An X-ray examination, if made by an expert, is a valuable adjunct.

Since the demonstration of the tubercle bacilli at this stage of the disease is possible in less than one-half the cases, much valuable time would be lost in waiting for a confirmation of the detection of early pulmonary tuberculosis.

In this report on ninety-six cases our records shows forty-seven were positive in the following order:

TABLE IV.

Examinations							
1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.
27	10	3	4	0	2	0	1

The greatest number of negative examinations in any one case was fifteen.

No doubt the question has arisen in the minds of some to the method of getting hold of early cases. There is probably not a family physician present who is not now treating several open cases of pulmonary tuberculosis. The solution of the problem is then to examine all contact cases and to detect all evidence of activity. Every family should be impressed with the importance of physical examinations, at regular intervals, of every member of the household. Then and not until then, will the doctor, who is primarily the teacher, render the highest service to humanity by saving the lives of those afflicted and, in a bigger field, by safeguarding those already exposed to the disease.

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DISCUSSION.

Silvio H. Von Ruck, Asheville, North Carolina: I have listened with much pleasure to Dr. Morris' paper. I think he has covered the ground very thoroughly and ably. There were several points I had in my mind as he was reading which I thought he was going to omit so that I could take them up, but he took them up one after another.

I do not wish to take the time of the Association in discussing the early symptoms and physical signs of tuberculosis because Dr. Morris has already done that. There were, however, two or three points brought out which I think should be stressed over and over again, especially the first one. He said that since the discovery of the tubercle bacillus there has been a tendency on the part of the medical profession to ignore the pathologic changes and not to make as careful a physical examination as was done years before we knew what the specific cause of tuberculosis was. We see evidences of that in our work frequently. It often happens that patients come to us for treatment and tell us they have had a cough and their sputum was sent away for examination, and because a negative report was made usually by one of the state laboratories, the doctor felt there was not enough evidence to make a positive diagnosis. A negative result of the sputum examination means nothing. We cannot expect to find tubercle bacilli in the sputum unless there is an open lesion or softening or ulceration or caseous focus, and so far as that particular lesion is concerned it has reached the advanced stage. We should, therefore, endeavor to make our diagnosis before finding tubercle bacilli in the sputum.

The other point which he brought out so nicely was the importance of examining the other members of the family of patients who come to us for treatment. Tuberculosis is of such slow progress, and as he said, at the time we have physical signs or symptoms which are recognizable, those which have taken place are the result of numerous exacerbations and periods of quiescence. Therefore, at the time a patient consults us he comes because he has symptoms, and that is usually in the initial period of phthisis not in the early period of tuberculosis from a pathologic standpoint. We often have the opportunity in many cases in our institution of examining the friends or relatives, brothers and sisters and whenever there has been a history of tuberculosis in the family it is seldom we have not been able to find evidences of physical signs in other members of the family who had as yet no symptoms of actual disease. This is to be expected when we consider the frequency of tuberculous infection. Tuberculosis is essentially a children's disease. I believe the vast majority of primary infections occur in the earlier years of life.

In more recent years there has been quite a series of cases reported in which tuberculin tests were applied in childhood, from nurslings up to children fourteen and fifteen years of age, and

some of these cases have been tested by the Von Pirquet cutaneous method, and the results of these tests have shown at the age of fourteen from 90 to 100 per cent. of positive reaction having been obtained which forces us to conclude that tuberculous infection is practically universal. We know the morbidity of the disease does not represent probably more than 15 per cent. of those who are infected. It is fortunate that nature has provided us with a specific mechanism of protection against the infection, and the reason that in the great majority of cases the infection has not progressed beyond the clinical stage is because of the development of antibodies or immune bodies against the action of the tubercle bacilli. We can always practically demonstrate by serological examinations of the blood of patients in the early stage of tuberculosis, or in people who have had no active symptoms, but who show no evidence of infection, immune bodies we must accept as evidence of the protection as a result of sensitization of the organism by the infection.

I will only add, that whenever you see a case of tuberculosis in a family, you should, if possible, persuade the other members of the family to be examined to aid you in the early diagnosis if you are the least in doubt.

W. W. Anderson, Newport: I have listened with a great deal of pleasure and much profit to this very able presentation of the subject of tuberculosis by Dr. Morris, and as is my custom, I will not waste time in throwing bouquets.

We have been accustomed to being told and to regarding hemorrhage an early symptom in some cases and the presence of the tubercle bacillus has been mentioned. Necessarily these cannot be the early symptoms, chronologically speaking, in the case, because there can be no hemorrhage until a blood vessel has been opened, and there is no open blood vessel until its walls have been destroyed after the destructive process, as a result of the action of the tubercle bacillus, has been going on a good while. To be sure, there may not be extensive involvement before hemorrhage. It may occur years before the death of the patient, but hemorrhage is not an early symptom. Nor are you making the diagnosis early if you depend upon finding the bacillus because the process must go on for some time before the tubercle breaks down and softens and ulceration occurs and the bacillus is expectorated, and then you have open tuberculosis.

Dullness has been given as one of the early symptoms. We used to be taught that an X-ray examination would give early evidence. Dullness and X-ray shadows in pulmonary conditions could not, in the very nature of the case, be early symptoms because dullness and the X-ray shadow both mean in part, at least, the same thing—consolidation. There is another cause for dullness, but of that later. Consolidation must be present to such an extent as to cast a noticeable shadow with the X-ray and to make a marked

dullness, that is, quite considerable consolidation, and must have taken some time to occur. Hence these are not early symptoms. Fever and loss of weight come in the same category. A little fever is not noticeable by the patient ordinarily and is frequently not detected by the physician who does not examine the patient at all hours or on different days. Fever is not noticeable sometimes until there is open tuberculosis and secondary infection. High fever, loss of weight and toxemia break down the resistance of the patient to a considerable degree. Usually none of these things is a part of the early symptoms. We must look for something earlier than any of these. One of the early signs that has been mentioned by the essayist, and I shall attempt to emphasize it briefly, is, muscle spasm. Muscle spasm I mentioned yesterday in discussing another subject. Just as you look for muscle spasm over the appendix, just as you look for rigidity there, so in the same manner should you look for and you will find rigidity over the seat of tuberculosis, or over the seat of any other inflammatory trouble in the lung. The symptoms of other inflammatory trouble, such as pneumonia, are so distinct otherwise you can easily in most cases make the diagnosis, so that when you have ruled out these things as the cause of muscle tension in the chest, you may consider tuberculosis as probably the condition.

Let us remember that spasm or rigidity of the overlying muscle is a constant reflex resulting from underlying irritation and that it is the earliest palpable symptom, probably the earliest discernible symptom, of pulmonary tuberculosis.

The region of incipience is most often one or the other apex. The intercostal muscles, the pectorals, the scalenus the sterno-cleido-mastoids, the trapezius, in short all the muscles that may contribute to the fixation of the affected area promptly respond to the inflammation beneath by a reflex rigidity.

Much more skill is required to determine rigidity in these muscles than in those over the appendix. There are two reasons for the difficulty, the comparative shortness of these muscles and the presence of rigid tissues just beneath them.

A third and much more important reason for our failure to elicit this symptom is that we do not search for it. Light and delicate palpation and percussion will find it. "There are few things hidden from him who diligently applies himself to the search." It requires diligent application, long and patient practice, to acquire skill in determining muscle spasm in the chest wall, but it can be done and is well worth the doing.

This muscle spasm in its earlier stages causes a slight unnatural fulness or outstanding of the muscles on the affected side as compared with the sound one. Here again we are in contradiction with one of the older teachings. You remember that we were taught to look for the

sunken chest, the subclavicular depression and the outstanding clavicle as early symptoms. Rather look for the rigid, outstanding muscles and the submerged clavicle as early signs. The reversal of the picture comes later when the muscles, worn down by prolonged spasm extending over weeks and months, starved by trophic-disturbances and poisoned by the toxemia of the disease, undergo degeneration. Then and not till then do we have the sunken chest and outstanding bony framework.

In the beginning I mentioned dullness as meaning consolidation of lung tissue but qualified the statement by saying "in part." The other part in the production of dullness is this same muscle spasm. For dullness is not alone lessened resonance but higher pitch as well. The rigid muscles contribute both to raising the pitch and lessening the resonance.

A. Sargent, Hopkinsville: We have all had experience with reference to the incipency of tuberculosis. This excellent paper covers most of the points that have occurred to me. One point the essayist laid stress on I am glad to emphasize also, namely, that we must make our diagnosis before we can find tubercle bacilli in the sputum if we are going to save the patient. These patients in my opinion are all toxemic before there is invasion of the tubercle bacillus. The well stay well, and those that are sick get sick, and if it is not the tubercle bacillus, it is some other bacillus that you will get if you are toxemic.

One point not mentioned is that these people in the early or incipient stage have a subnormal temperature recurring with weakness, loss of flesh, a little cough and clean tongue, you had better get busy. I think it is an early sign that is more important than elevation of temperature because elevation of temperature does not begin until there has been sepsis and you have this complication.

Another condition that I have observed in investigating these cases is that a patient who has many of the symptoms of tuberculosis will present a gastropnoxis or a prolapse of the stomach and the liver on the right side and the heart on the left. These cases in my experience rarely or never present tuberculosis.

Another point the essayist did not mention, which is very important, is subnormal blood pressure. The very earliest symptoms of tuberculosis are indicated by an abnormally low blood pressure. If I find a patient who has considerable cough or a slight cough, if I can distinctly assure myself that patient has a blood pressure above normal, I feel pretty safe in saying we will not have tuberculosis.

Another feature of this work that has occurred to me is the ingratitude of these indigent cases. You may go to any amount of trouble and investigation and warn these people of their danger and get them well and they give you no credit for it. They say it was a bad cold, it was

stomach trouble, or it was something else that was the matter with them, and that you were mistaken.

TREATMENT OF TUBERCULOSIS.*

By EVERETT MORRIS, Oak Forest, Ill.

In a brief discussion of the treatment of tuberculosis one can only outline some of the different measures that are being used in the various stages and conditions of the disease.

The advantages offered in a Tuberculosis Hospital or Sanitarium for the treatment of this disease are, of course, greater than we can hope to attain in our private work. Discipline, one of the chief factors in the management of any case is of paramount importance. This can be established and maintained in an Institution; whereas, in private practice, it is next to impossible. The example of other patients, the view-point of all who come in contact with the patient (except the visitors) help to stimulate and encourage him to do the things he was instructed to do on admission. On the other hand, the family physician has not only the patient to keep under rigid living conditions, but he has also to meet the open antagonism, sometimes, of the family, and friends.

It is not my desire to argue for hospital care, but there is one strong point I can not refrain from mentioning, but that is its preventive worth in removing the source of infection from the house.

The very first step necessary in the management of tuberculosis is to know the patient has tuberculosis. The patient should be told plainly and unequivocally that he has tuberculosis, that his chances for an arrest or cure depends very largely on how hearty he gets into the game of getting well.

Such unfortunate terms as "catarrh" and a little "weakness of the lungs" will never impress the patient with the seriousness of his trouble. Then, too, you may not hope to get his co-operation in management. Teaching a careless consumptive the necessity of caring for the sputum is in itself often difficult.

Until we have some improved methods we must, necessarily rely on the hygienic-dietetic treatment with such other valuable adjuncts as tuberculin, artificial pneumothorax and graduated labor in selected cases.

The open-air cure spells the antithesis of the ordinary method of housing.

The rest-cure means freedom from physical or mental exercise and is indicated as long as there is an unstable temperature or pulse curve.

The dietary should be varied and well balanced, allowing the patient to eat everything

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

that agrees with him, provided he can secure them. About one year ago, we discontinued, at the Cook County Tuberculosis Hospital, to give our six hundred and forty patients lunches between meals,—even including the children, and found it so satisfactory we have never returned to the custom. Our experience is that forced feeding is pernicious, and that three good meals each day is sufficient.

Calomel and salts is a sovereign remedy with me. We must keep the enunctories active. Cough remedies, especially if containing some form of opium, are, of course, indicated in hopeless cases, but in early and ambulant cases the patient should be taught to control the cough, and to avoid cough mixtures as much as possible, as many of them interfere with digestion.

After the temperature and pulse have been brought to normal, or nearly so, by rest, a patient may be given five or ten minutes walk. Immediately, and one-half hour after, the pulse, respiration and temperature should be taken and rechecked. All forms of exercise in active pulmonary tuberculosis demands as much consideration from the physicians as any drug he may prescribe. When the disease has become quiescent, or apparently arrested, graduated exercise bridges over a very dangerous period in a consumptive's life—the restless period between the cessation of symptoms, and the time to begin a life of economic usefulness.

A very helpful remedial and often curative method of treating far advanced unilateral cases of pulmonary tuberculosis is artificial pneumothorax. The ideal case for this compression method is a recent, active, destructive lesion of one or more lobes located on one side and free from pleural adhesions, the other lung being practically free from any pathology. This operation is not difficult and it offers enthusiastic medical men a field of activity in which much good can be done.

After all the treatment of pulmonary tuberculosis resolves itself into, first: knowing the conditions of the patient, and then using the approved methods in general regime, plus special methods in suitable cases. It also embraces discipline, common sense, education and optimism.

One of the greatest stimuli in the treatment of tuberculosis is to have some satisfactory place in which to treat the patient. The Kentucky Tuberculosis Commission is anxious to establish County and District Sanatoria all over this State. Their success will depend on you. Will you help?

SPECIFIC TREATMENT OF TUBERCULOSIS.*

By SILVIO H. VON RUCK, Asheville, N. C.

I did not expect to speak to you this afternoon, and when Dr. McCormack suggested that I talk to you about the treatment of tuberculosis he gave me a rather large contract. It is such a large subject that I hardly know where to begin.

Dr. Morris spoke of the general management and care of the patients which are essential regardless of any method of treatment which we may wish to employ. I might say a few words in regard to specific treatment inasmuch as Dr. Morris has not mentioned it.

We have been using specific remedies in the treatment of patients ever since tuberculin came out in 1891, or my father has. At that time he spent two or three months in Berlin watching the work where they were trying out tuberculin, and he came back with the impression that a great deal of harm was being done. However, the demand on the part of the people at that time for tuberculin was intense. They had an idea it was specific for consumption. Everybody wanted to get some. He began to use the preparation very cautiously and in minute doses, adhering to the regular dosage to avoid any fatal reactions. After working about a year he felt that the clinical results were better than they had been without it.

Other methods of treatment, which have been carried out in our institution through the introduction of tuberculin, were continued as before, and there was a definite difference in the percentage of reactions due to tuberculin, but no other change was made. Shortly after that time tuberculin became unpopular, not perhaps because it was considered a remedy really of no value, but because it was not clearly understood and because it had been misapplied and frequently used in unsuitable doses in unsuitable cases. He felt it was probably essential for better results if he could get a preparation which contained some bacillary substance in solution, and to this end for the first time we made up bouillon cultures in form with culture tubes containing tubercle bacilli and dropped them into a solution of some bacillary substance. The preparation which resulted from that attempt seemed slightly better again than crude tuberculin.

In 1897, as a result of studies in the chemistry of the tubercle bacillus, which was made, it occurred to him that if we could separate the fatty substance present in the tubercle bacillus in 25 to 40 per cent. of the body weight,

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

we might be able to get some simple constituents in the solution in water; therefore, extracting the tubercle bacillus en masse with alcohol and ether, and after removing all fats, we then dissolve out in solution the protein which was soluble in water and which we used for many years and to which we gave the name watery extract. This preparation did contain traces of the fatty substance, but we did not know it at the time. We tried to get it all out because fatty substances of the tubercle bacillus in any considerable amount tend to produce tissue necrosis at the point of injection in the human subject. Our clinical results were much better with that preparation and continued so uniformly. After we began to use tuberculin preparations we had about four times as many apparent recoveries and arrested cases as by the ordinary methods of institutional treatment, which consisted of general management, rest and exercise, symptomatic treatment, fresh air, outdoor life, and ever adding to our efforts in modern times to combat the disease.

With this preparation of watery extracts we attempted years ago to immunize experimental animals. Our results were rather uncertain and not uniform, and we were not able to conclude that we could protect the animal by previous treatment against infection with tubercle bacilli, and that work was not reported.

Some years later, advances having been made along the lines of study in immunity, it was suggested to us that we make a study of the sera of our cases as regards the power of the serum to fix the complement, and we made many examinations extending over a period of a number of years of the sera of patients before, after and during treatment with this preparation of watery extract. After comparatively short periods of treatment in suitable case we could demonstrate complement fixation in serum dilutions as one to ten or more. At the same time, we found there was a progressive increase in the agglutinating power of the serum, and at the time of Whight's work on the opsonic index we were able to see the results he had as a result of his treatment by controlling the doses by the opsonic index. There was a parallel between the opsonic index and the amboceptor curve. We made daily examinations and worked over considerable periods of time. We found we could bring about the maximum degree of complement fixation after a comparatively short time until we raised the question, would it be possible to secure a preparation with which we could accomplish this in a single dose or in very fine doses? We hoped this would be possible; but through the development of immune bodies in the blood such a preparation might be used prophylactically, and we could recommend it for such work.

We made our first attempt. We worked in two directions, one studying complement fixation after a few doses, especially in children that were affected and children in tuberculous families and on the other hand, we worked with the view of getting a proper preparation. We felt it was essential to be able to get a preparation which represented a bacillary substance in solution, unmodified by heat or chemicals, to do this work. We had worked with it experimentally in animals. We found we could successfully inoculate animals, and had no difficulty with abscesses developing at the point of injection.

Our first case was a young girl who had a destructive lesion in the right upper lobe of the lung for some time. There were tubercle bacilli in the sputum, and in this case we cleared the physical signs up to a marked degree. With six doses, given a week apart, during the sixth week an abscess formed at the point of injection. It was a sterile abscess, it being purely a tissue necrosis. We abandoned the preparation on that account although the preparation was more efficient than one we had been using before. We tried a few more cases after two months work with that girl and had the same experience with abscess formation, although we had a fat content of a ten millionth of a milligram per c.c., we did not have as much misfortune, but occasionally abscesses occurred. We had to give that up eventually. We had given a fat content of one hundredth of a milligram and never had any abscess formation. We found complement fixation and partial antigens, and in the work done by others it was found essential to have traces of fats in the preparation of what we might call complete or whole immunity. With this preparation we were able to experiment with animals against virulent infections. We were able to prevent against infection with a single dose in adults or children who had not clinical tuberculosis --- children who showed evidence of infection but still had no clinical disease. We felt that we could satisfy ourselves we had rendered these children more highly resistant against infection, not only because of the development of immune bodies, but because we were able by bactericidal experiments to demonstrate that the serum of the vaccinated child would destroy the virulence of the tubercle bacilli in vitro, so they would not be infectious for experimental animals. A simple experiment consisted in adding a couple of drops of serum of the immunized or vaccinated child to 2 hundredths of a milligram of tubercle bacilli in a test tube and incubating this for twenty-two hours at 37 1-2 C, the tube contents being washed out with normal salt solution injected into the experimental animal, and control animal. The serum of the child

who had been so vaccinated did not apparently affect the virulence of the tubercle bacillus and its power, but in some instances it appeared to inhibit or retard the progress in the animal, so that the experimental animal lived longer in many cases than those infected directly without the tubercle bacillus having been acted upon by any sera.

We have continued this work for the past four or five years, and we have so vaccinated about 2000 children apparently with quite uniform results. We have been able to demonstrate immune bodies in the body after vaccination and have drawn the conclusion that we had produced bactericidal immunity.

Of course, the laboratory can only be used as a support for clinical work. We cannot depend upon the laboratory alone, and the fact that we may be able to protect experimental animals against infection is not sufficient evidence to justify us in assuming that such a method will be of actual clinical value. We believe, however, there has been a great deal of benefit as a result of such treatment in this way because of the general improvement in their nutrition. The great majority of children exposed to infection, while not ill and free from clinical symptoms, have been under weight, not up to the normal standard. They do not meet your conception of what a normal child at a given age ought to be. These children have increased in weight quite rapidly in the first two months after such vaccination and all instances, with a few exceptions, have obtained a normal standard. We have in calculating weight gains allowed a pound a month for normal growth in children under twelve years of age and a pound a month for children over twelve years of age. Children five or six years of age gained four pounds in a month which is out of proportion in the growing child.

Quite a number of other physicians have used this preparation in private practice and report very good results, and they have treated as many cases as we have with similar results.

In two cases we found hereditary lues which we had overlooked in our first examination. In another case we found chronic malaria, and in still another case chronic tonsillar infection, and so when we had no other complication we found a definite improvement in nutrition.

About one-half of the children showed on physical examination enlarged cervical and axillary lymph nodes. On re-examination at varying periods, from one or two months up to four months, we found that probably one-half of the cases had enlarged lymphatic glands which subsided and disappeared, and in others had shrunk down and become hard. In about one-third of the children, especially those who were a little older, say

eight or ten years, we found evidences of physical signs in the lung. In this connection I might call your attention to the fact that our textbooks teach us that we must always look for a lesion in the middle or lower part of the chest in a child, which apparently does not hold good. We found lesions in the apex, as in the adult, usually supra and sub-clavicular, and in many of these children there was restriction and limited motion over circumscribed areas. In these instances there was apparent improvement in the physical signs. In some children we got active improvement in the physical signs. In some children we got active trouble in the sense of early tuberculosis, and in acute cases there were tubercle bacilli in the sputum. In those children where there were lesions they received two or three or four doses.

On subsequent examination we found evidences of retrocession and reparative changes as regards physical signs. We have not been able to keep all of these children under observation. We have had the opportunity of treating several hundred children in the orphanage at Thomasville. The children vaccinated four years ago still continue to maintain a good standard of health. There has been no development of the tubercle process in any of them up to this time.

In discussing Dr. Morris' paper I spoke of a positive tuberculin test in childhood. We have been making an effort in the past ten or twelve years to prevent infection along the lines of public education as regards cleanliness and sputum prophylaxis. While we may not succeed in wholly preventing infection, we may prevent the rapidity of the infection or the massiveness of the infection. At any rate, we do not prevent actual infection. We cannot apparently hope to do so according to our clinical experience, and our patients are a class of people who are in comfortable circumstances and who understand the care of the sputum and take every precaution against infection, but who have not handled children from the time they had tubercle bacilli in their sputum. In hundreds of instances of children we have examined we cannot prevent actual infection. It has been suggested that we might do it by isolation as in some other infectious or contagious diseases. That is not practical. We cannot isolate consumptives as they are too numerous. If we could, we could not isolate each individual in time. The first time we may be able to find tubercle bacilli in the sputum at our first examination, but that is not the first time the tubercle bacilli have been there by any means and, of course, we do not have opportunity to examine patients and make a diagnosis until they have sufficient symptoms to consult us; therefore, we cannot prevent infection by isolation. The only prospect for limiting and

preventing infection and the spread of tuberculosis in the next generation is to establish some means of prophylactic treatment of a specific nature. We are immunizing against typhoid with whole antigens, and there is no reason why we should not immunize against tuberculosis. Because of the chemical structure of the tubercle bacillus, we have not been able to use tuberculous emulsions in sufficient doses to bring about immunization because of the fat content that produces abscess. That is why, I presume, biological concerns, like Mulford & Company and Parke, Davis & Company, advise small doses. If doses much larger are administered, abscess forms at the point of injection, and that does not do and is very objectionable to the patient. Slower methods of immunization can be made in these children with such preparations. Successful immunization can be more readily accomplished by intravenous administration. We have succeeded in immunizing animals against infection by intravenous administration of bacillus emulsion. If they would extract the fats before making up the emulsion, we could use larger doses without that objectionable feature. Really, when we talk about the early diagnosis of tuberculosis, we must go back further than the individual patient. We need to go back of the children and other members of the family who have been under the environment and associated with tuberculosis. Patients are either infected or represent the closed stage of tuberculosis which we should hope to reach at a period before they have fever, cough or expectoration, or any of the active symptoms. That class of cases offers us the best prospects.

We have no longer a specific when the disease reaches the secondary stage, with necrosis, and so forth. We are dealing with a different problem then. We have a much mixed pathology, and we have many other secondary mixed infections to deal with. We cannot hope to have a specific for phthisis when it is fully developed; but we can get beneficial results in the prephthisical period by this method of immunization. We have not seen any untoward effects although we have had some pretty severe fever reactions in children and adults, but no lasting effect either in our own personal experience or in that of others who have employed the preparation for this purpose.

I believe the profession is gradually coming to recognize that medicine is becoming more and more preventive medicine, and that we may look forward to the time when we shall be able to discover a perfect preparation which will be specific against every infectious disease. That being the case, there is no reason why it should not be done in tuberculosis

as well as in other infections where we have evidence it can be accomplished.

This experimental work was repeated in the laboratory of Sir Almuth Wright a couple of years ago successfully. They were able from a single dose of serum to determine it was bactericidal for the tubercle bacillus, but the animal experiments done were not satisfactory because of the per cent. of tuberculosis in the animals which clouded the results.

I would urge that a plea be made for some method of specific treatment, some preparation which can be given to children and other members of tuberculous families where there has been a case of tuberculosis. It is essential that whatever preparation is used should represent a bacillary substance. Old tuberculin or modifications of it which represent some modification of a culture upon which the bacillus is grown do not contain the endotoxins of the bacillus and cannot bring about bactericidal immunity with true tuberculin. You can bring about antituberculous immunity, but patients do not suffer seriously from intoxication. That is not what causes the death of the patient in the end, but it is the secondary changes which it produces, and a pure toxemia in the early period is not a thing we need to combat, but we need to combat the tubercle bacillus itself. (Applause.)

THE PRESIDENT: I wish to express the thanks of the Association to these two distinguished gentlemen for giving us these excellent talks.

Skin Cancers of the Extremities.—In considering the predisposing causes of cancer of extremities, Volkmann conveniently divided the cases into three groups, a classification which has been followed by a number of subsequent writers on the subject. The first group consisted of cases developing upon chronically inflamed tissue, as a result of ulcers, scars, fistula, osteomyelitis, lupus, etc. The second group included cases developing upon warts or moles, either congenital or acquired in later years. The third group consisted of cases arising in apparently normal skin. In a series of 321 cases, von Brunn found that 227 could be placed in the first group, 46 in the second, and 48 in the third. It is thus seen that the majority of cases developed upon a chronic inflammatory basis.—Howard Fox in *The Journal of Cutaneous Diseases*.

Carcinoma of the Superior Tarsal Cartilage.—S.G. Mansilla (*Revista de Medicina y Cirugia Practicas*, September 21, 1916) reports a case of this extremely rare condition in a woman fifty-two years of age. Excision of the mass with plastic repairs of the eyelid gave a good result except that there was a shortening of the upper lid which interfered with closure of the palpebral fissure.

INDICATIONS FOR CHOLECYSTOTOMY AND CHOLECYSTECTOMY.*

By IRVIN ABELL, Louisville.

The one point in connection with the gall bladder which has remained constantly fixed in the professional mind, and about which there has been no difference of opinion, is the anatomy. Leaving this point one runs counter of many opinions regarding its physiology, its diseases, and their treatment.

The gall bladder has been quite generally held to be a reservoir for bile, but since its average capacity is one and a half ounces, and the average amount of bile secreted by the liver in twenty-four hours is thirty ounces, this function cannot be important; furthermore, some of the lower animals (the horse and the deer) have no gall bladder, and the human being whose gall bladder has been destroyed by disease or removed by the surgeon, suffers little or no inconvenience from such loss *per se*.

By some the gall bladder is thought to be a "tension bag" insuring an even flow of bile into the duodenum and preventing its regurgitation into the pancreas. Others think that the mucus secreted by the gall bladder renders the bile less irritating to the mucosa of the digestive tract and pancreas, while some regard it as an obsolete storage house and a disappearing organ. Whatever its physiological function, the train of events following its invasion by micro-organisms are quite apparent.

It is conceded at the present time that the exception of neoplastic diseases, the surgical lesions of the gall bladder are dependent upon infection. Until quite recently the accepted routes of invasion were believed to be, in the order of their frequency, the common duct, the portal circulation, and the systemic circulation. The contents of the duodenum, in the absence of food, have been shown to be free of infectious material. The common duct is safeguarded from the entrance of duodenal contents by the obliquity of its course through the muscular wall of the intestine and by the sphincteric action of muscle fibres surrounding it at the tubercle of Vater. Coffey's experiments led him to conclude that the duodenum, dilated under pressure with air or water, would rupture before either would enter the common duct; yet Bond was able to obtain from the drained gall bladder of the living subject granules of indigo-blue fed to the patient by mouth. He showed by experimental work both motile and nonmotile bacteria were capable of traversing mucous ducts in directions opposite to their currents.

In the light of our present knowledge, bacterial invasion of the gall bladder and bile tract through the common duct must be regarded as of less frequent occurrence than formerly thought.

Adami, Lartigau and others have shown that bacteria may be carried by the lymphatics from the intestine to the radicles of the portal vein, and thence to the liver, where, if they escape destruction by the hepatic cells, they are excreted with the bile and thus reach the gall bladder. Granting the entrance of bacteria into the gall bladder by these two channels, common duct and portal vein, they are confronted with the difficult task of forcing an entrance into its mucosa.

The gastro-intestinal and urinary bladder mucosa may have infectious material flowing over them for an indefinite time without themselves becoming infected, and we may reasonably expect the gall bladder mucosa to be equally resistant. Judd has suggested the possibility of organisms reaching the gall bladder by these routes, especially in the presence of stagnant bile, becoming foci for stone formation rather than producing an active infection of the gall bladder wall.

Joseph and Doerr demonstrated the possibility of the infecting organisms reaching the gall bladder by means of the systemic circulation. Rosenow's work would lead us to believe that this is the most frequent mode of invasion, and further that certain strains of germs exercise a selective affinity in their attack. The type of cholecystitis giving the most trouble is that in which the infection is not limited to the mucosa but is in the gall bladder wall.

Rosenow made cultures from the gall bladder walls and respective lymph glands removed at operation, obtaining twelve strains of germs, with which by intravenous injection he was able to produce cholecystitis in 80 per cent. of forty-one animals so injected. As a result of his experimental work he states that "the conclusion seems warranted that appendicitis, ulcer of the stomach and duodenum, and cholecystitis, are largely embolic infections from some distant focus of infection, or even from the more or less normal intestinal tract, by streptococci or other bacteria having elective affinity for these structures, and that the simultaneous presence of two or more of these diseases in the same individual is in the beginning due more often to this cause and not so often to infection by continuity or by way of the lymphatics."

The diagnosis of gall bladder lesions is no longer confined to a recognition of colic due to calculi; but with the evolution of laboratory methods, permitting a recognition or elimination of the lesions producing similar

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manifestations, and a more accurate interpretation of clinical symptoms, we are able to make a diagnosis in the vast majority of cases. In those cases in which a definite diagnosis cannot be reached by such methods, granting that the discomfort is of such degree as to warrant it, exploration reveals the gross changes in the gall bladder wall and the evidence of infection afforded by the sentinel glands situated along the cystic and common ducts. If no gross changes can be detected in the gall bladder or its contents, and no enlargement of the glands is present, it is assumed that other lesions are responsible for the symptoms.

The history of the surgical treatment of the diseases of the gall bladder is interesting. It was at first thought that removal of the stones and drainage of the gall bladder met all the indications, by overcoming obstruction and relieving infection; but the occurrence of symptoms without stones and stones without symptoms, the recurrence of symptoms after the removal of stones, even the recurrence of stones following operations for the removal of such, together with a recognition of the etiology of stone formation, and still later with an appreciation of the site or seat of embolic infections in the gall bladder wall, have led many surgeons to advocate cholecystectomy in preference to cholecystostomy.

At the present time the choice of operations must be regarded in many instances an open one, while in others the pathology and increasing experience have demonstrated the more rational procedure. The advantages of cholecystostomy are that it is in many cases, owing to local and general conditions, a simpler and safer operation; in acute and violent infections it affords efficient drainage with a minimum of trauma; in associated pancreatic disease it safely supplies the needed drainage. Its advantages are that in gall bladders presenting structural changes in the walls, drainage does not remove the infection or cause a resolution of the pathology, consequently recurrence of symptoms, even to recurrence of stone formation, not infrequently follows; the retention of such diseased gall bladders exposes their possessors to continued discomfort, and to the danger of subsequent malignant degeneration.

The advantages of cholecystectomy are that it removes the pathological condition upon which the symptoms and discomfort depend, consequently recurrence of symptoms is not so frequently noted. Its disadvantages are that the technique is more difficult of execution, entailing danger of injury to the common and hepatic ducts, and hemorrhage from the liver surface and cystic artery; that with coexisting infection in the pancreas and the bile ducts, adequate drainage is not obtained.

With the development of efficient technique the experienced operator is able to overcome the first disadvantage in most cases. It has been shown experimentally in animals that following cholecystectomy a compensatory dilatation of the common duct occurs, allowing a free flow of bile into the intestine. Basing their opinion upon this hypothesis some operators have advised cholecystectomy as the operation of choice in chronic pancreatitis; but, that this dilatation and free drainage will occur in the presence of pressure from an enlarged and hardened pancreas, is open to doubt.

In reviewing the voluminous literature of the present, one is impressed with the divergence of views entertained by surgeons of experience upon the indications for the two operations. Some prefer cholecystectomy in every case, while others never perform it excepting in gall bladders presenting complete closure of the cystic duct, or in carcinoma: the majority have taken positions between these two extremes.

The fact that cholecystostomy with removal of stones has proven curative in 75 per cent. of cases, and the equally important observation that recurrence of symptoms has followed both operations, should lead us to apply to the individual case the procedure most suited to it; hence, in the absence of well recognized indications or contraindications, the selection of the operation in a given case becomes a matter of judgment of the operator.

Indications for cholecystostomy: Thin walled gall bladders not burdened with crippling adhesions and containing stones, have been long considered the ideal cases for cholecystostomy; and it is true that about 75 per cent. to 85 per cent. will be permanently relieved by this operation. The remaining 15 per cent. to 25 per cent. represent the bone of contention. The cases that are cured are those in which the infection has been of mild type, or in which it has been eliminated by natural resistance; those that are not cured show inflammatory deposits in the wall or mucosa, the latter exhibiting various phases of pathology and classified as the strawberry or mulberry type. The crux of the situation in this type of gall bladder is our ability to recognize at the operating table the permanent tissue changes incidental to chronic infection. The observation made by the Mayos that enlargement of the glands draining the gall bladder is a reliable indicator even in the absence of palpable evidence in the gall bladder wall, is a most useful aid; but what of those that present no such glandular enlargement? Experience has shown that these are not all relieved by drainage, with the result that many men are resorting to cholecystectomy in an increasing percentage of such cases.

It is interesting to note that at the Mayo Clinic in 1907 one hundred cholecystectomies and two hundred and sixty-one cholecystostomies were performed while in 1915 nine hundred and fifteen cholecystectomies and only sixty cholecystostomies were done. In patients whose condition is rendered desperate, either by the local lesion or by systemic disease, cholecystostomy should be given preference. Cholecystostomy will be found simpler and safer in patients the conformation of whose abdominal walls and the deep-seated situation of the gall bladder render it difficult of access; such anatomical difficulties are frequently encountered in excessively fat patients.

In acute violent infections it is not always possible to determine the absence or presence of infection in the hepatic ducts; in such cases cholecystostomy is safer than cholecystectomy, and the latter should be reserved for those instances in which it is warranted by continuation of symptoms after subsidence of the infection.

Cholecystitis complicated by hepatic or subhepatic collections of pus should be treated by drainage regardless of the condition of the gall bladder, the prime consideration being the preservation of life; restoration of health may require a second operation, at which time the gall bladder may be dealt with in such manner as its condition indicates.

Acute empyema is usually more safely treated by cholecystostomy; the removal of such gall bladders entails the separation of protective adhesions and the leaving of rather extensive raw surfaces in the presence of active infection.

In perforation of the gall bladder the patient's condition usually precludes doing more than drainage; if the perforation is at or near the cystic duct, and the patient's condition permits, the gall bladder should be removed.

In cholecystitis with associated pancreatitis or cholangitis, cholecystostomy safely offers the required drainage; the edema and inflammatory reaction at times noted in such cases render the recognition and manipulation of the common duct unsafe; while in cases presenting no such technical difficulties the prolonged drainage required for the cure of the associated lesion is better borne by the gall bladder than by the common duct.

Indications for cholecystectomy: The lesion of the gall bladder conceded by all to be amenable to cholecystectomy only are, papillomatous or polypoid degeneration of the mucosa, calcareous degeneration of the wall, stricture of the cystic duct, and carcinoma. Thick walled gall bladders whether large or small with patent cystic duct, no longer capable of distension, should be removed. Drainage does not remove the low grade infection

in the walls, nor cause a resolution of the fibrosis resulting from such infection.

The adhesions resulting from chronic cholecystitis are often of such character as to interfere with the stomach and duodenum, and when separated leave the gall bladder denuded of its peritoneal coat; recurrence of such is best prevented by removal of the gall bladder, the site of the infection, and the covering of raw surfaces with omental grafts. Contracted bladders are difficult of drainage, and are best removed.

In chronic hydrops or empyema due to impaction of stone in the cystic duct, when the safety of the patient permits, the gall bladder is best removed since the ulceration of the mucosa at site of lodgment of the stone frequently leads to stricture.

Gangrenous cholecystitis, when the condition of the patient offers no contraindication, is best treated by cholecystectomy; otherwise the destroyed gall bladder leads to prolonged drainage and the formation of disabling adhesions.

In chronic cholecystitis with moderately thick walls presenting minute ulcerations of the mucosa and multiple cholestrin deposits, the patient does not get well with drainage. Temporary relief of symptoms with recurrence following the cessation of drainage is the rule until relieved by cholecystectomy. Gall bladders having fistulous communications with adjacent viscera are best treated by cholecystectomy.

CONCLUSIONS.

1. The routes of bacterial invasion of the gall bladder are, in their order of frequency, the systemic circulation, the common duct, the portal circulation.

2. Surface infections of the mucosa are relieved by drainage; infections of the deeper structures, and the cellular changes resulting from such infections, are not relieved by drainage.

3. The more acute the infection the greater the safety of cholecystostomy over cholecystectomy; the more chronic the infection the greater the percentage of ultimate cures obtained by cholecystectomy.

4. The presence of stones, excepting when producing obstruction or ulceration, is not a determining factor in the choice of operation; the degree of infection, its duration, extent and localization, the tissue changes thereby produced, and the condition of the patient, are the all important factors in such choice.

5. Recurrence of symptoms are noted after cholecystostomy in a certain number of cases, variously estimated at from 10 per cent. to 25 per cent.; recurrence of symptoms after cholecystectomy, to an appreciably less degree.

6. Sound surgical judgment at the time of operation is most essential, both as to immediate mortality and ultimate cure.

WHAT CAN THE INTERNIST DO FOR INFECTION OF THE BILE TRACT?*

By W. A. JENKINS, Louisville.

It is now a well known fact that a host of disease producing agents have the power to attack the bile passages and even the liver itself. Some of these agents are microorganisms, which belong to the vegetable kingdom, (bacteria,) and some of these organisms belong to the animal kingdom, (protozoa). Both of these types of micro-organisms come within the limits of the definition of an infection. However, for the sake of brevity and conciseness, in this short paper, we will take note only of that type of infection which is produced by micro-organisms belonging to the vegetable kingdom, namely, the bacteria. Of the recognized bacteria, quite a large group are now known to invade the biliary tract and the liver. The commonest offenders are, typhoid bacilli, colon bacilli, the pneumococci, staphylococci, and streptococci, and of this list, the streptococcus, the typhoid bacillus and the colon bacillus are the chief offenders.

How are these infecting organisms carried to the liver? First, by continuity of structure, for example, disease of the duodenum, disease of the proximal end of the common bile duct, thence directly up and ramifying with the subdivisions of the biliary passages. Always traveling first by tissues, that are anatomically and histologically similar, (continuity).

Second, by contiguity, that is the disease focus may be primarily in one type of tissue, (in the upper right abdomen, let us say) and the infecting organisms travel across into the bile passages, thus passing from one type of tissue to another, which later differs anatomically and histologically from the tissue primarily invaded, (contiguity).

Infection may occur fairly commonly from the gastro-intestinal tract, which harbors many bacteria, directly from the duodenum into the bile passages at their point of junction with the duodenum, and travel from this point over the entire distribution of the bile passages, (the so-called "papilla duodeni route," or ascending infection). A glance at illustration No. 1, will help us to appreciate how possible this hypothesis is and how readily infection can occur by this road. The commonest route, however, is through the blood, (arteries, veins and lymphatics.) The

thing which happens most of the time perhaps is for the infecting agent, the typhoid bacillus, or the colon bacillus, to be picked up by the blood from the intestinal tract and carried via the portal blood to the liver, and then

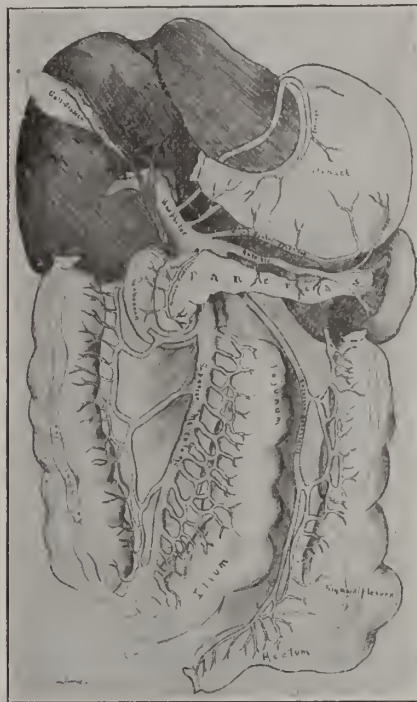


FIG. 1.

down throughout the entire length of the biliary tract, as exhibited in illustration No. 2. This latter is the commonest road by far, and is spoken of as descending infection. The infection may also be carried by the abdominal

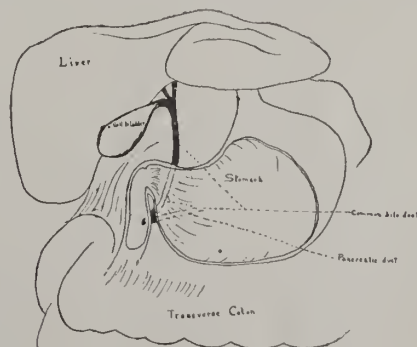


FIG. 2

lymphatics, and then gain entrance as above.

The bacteria may be carried by the systemic arteries, e.g., the pneumococcus from the lung to the heart, the aorta, the celiac axis and finally the hepatic artery.

Why do these germs locate in the biliary passages so readily?

We know that micro-organisms are constantly present in the intestinal tract. We

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have just noted above that they have two easy roads to the biliary passage. One directly by ascending the main gall duct to the liver, the other by the blood and lymph channels of the gut, via the portal circulation through the liver, thence down through the bile passages.

Now we know that infections of the gall tract are always preceded by a so-called catarrhal state of this same tract. A condition in which the mucosa of the tract is thickened and engorged. The mucus that is secreted is abnormal, it is thick, ropy and tenacious, and it serves the double purpose of retarding the biliary flow and at the same time, by so doing, offers a natural *locus minoris resistentia*, to the invading organisms, while the organisms in turn stimulate the mucosa to form more mucus and also to throw out cholestrin and lime salts in excess as well. Hence the chain is complete, infection takes place.

And I might say in passing, that right here we have the genesis of the gall stone. Micro-organisms plus epithelial debris excess of thickened and concentrated mucus, excess of cholesterolin, excess of lime salts, abnormal slowing of bile current, plus the element of time, equal gall stones.

How may we recognize the fact that micro-organisms have located and that infection has taken place?

The clinical picture which presents itself in the average acute case would be about as follows:

Subjective tenderness and some pain in the hepatic region, radiating in some instances to the right shoulder. A tender swollen and somewhat enlarged liver on palpation. A sub-icteroid tinge to the skin and ocular conjunctiva, or even frank jaundice. Fever usually moderate in degree, some gastro-intestinal distress is usually present as gastric unrest, nausea or vomiting.

If the infection is severe, all of the above symptoms are accentuated, the fever is high and we are likely to have chills and sweats.

The infection may be localized in the bile passages with the above symptoms, or the event may occur as a complication of some general or systemic infection, for example, we internists oftentimes see a picture somewhat resembling the above, develop in our cases of typhoid and in our cases of lobar pneumonia.

There is another type of acute invasion that occasionally confronts us, namely, the fulminating, phlegmonous or suppurative type. The onset is startling and characteristic. There is severe and terrible pain in the right upper quadrant of the abdomen. Extreme tenderness and perhaps a tumor in the region of the gall bladder. Constant and distressing nausea and vomiting, rapid rise of pulse and temperature, the abdomen quickly becomes distended, tender and rigid. The bowels do

not move and prostration comes on apace. The possibilities of perforation and peritonitis loom up on the mental horizon. The above forms one type of "the acute surgical abdomen, bile stones may or may not be present.

The sub-acute and chronic forms of biliary infection are not readily recognized. This is particularly true of the sub-acute type. It is often overlooked, neglected or not recognized, and thus much valuable time is lost. The physical signs and clinical symptoms are fugitive, indefinite and insidious in their onset, at this stage, and yet they are of the very highest importance to the thinking physician. The patient very likely an individual at or near middle age and in seemingly good health, often even plethoric, exhibits symptoms as follows:

Mild, indefinite gastric distress begins to show up. Gas is present. The patient feels a pressure downward, toward the heart, which may come soon after eating, or later this feeling occurs at irregular intervals and at times appears very suddenly. Gripping or cramping pains may occur, some relief is obtained by belching. Some weeks later in one of these little spells, slight vomiting occurs. These attacks may be close together or far apart, from the standpoint of time. These spells may come on with great suddenness and strange to say, they usually depart with equal suddenness. After months of this sort of thing, the patient may call the doctor's attention to the fact that he has a continuous dull, heavy pain in the epigastrium, running around under the ribs toward the right side. He declares that exertion, forceful body motions, and even deep breathing increases the pain, and it is always accentuated when he has one of his "indigestion spells."

As time rolls on, the patient has to go to bed with one of his spells, and the next morning the doctor finds that he has some temperature. A little later, the doctor is called out of bed at midnight to administer a hypo of morphine, his patient is suffering so intensely. Now the doctor is a bit worried. He asks some questions, gives the patient a good dose of rhubarb, calomel and soda, followed by oil, or a saline the next morning, and he leaves word that the patient is to have no food and must keep quiet for twenty-four hours.

In two or three days the patient is again perfectly well, and still the doctor has not recognized the true condition. The disease is spoken of as "gastralgia," or it is known by that meaningless and abominable term, "stomach trouble."

I wonder how many of us present here today have treated cases of "stomach trouble" like this. This sort of thing may continue for some months, or even in a few cases it may be a matter of years, and then we pass into

the stage of complications. Now we may have adhesions, contractions, obstructions, pancreatic involvement, bile duct obstruction by stones, pus, gangrene, perforation or peritonitis. And sooner or later there ensues in such a case, the picture that we described above under the title of "The Biliary Type of Acute Surgical Abdomen," the end result, so to speak.

Then there assembles at the bedside of this patient, the beloved family doctor, the distinguished surgeon and all the relatives of the patient. But unfortunately, it is then too late in most instances to bring about radical, complete and permanent cure.

How do we treat these cases after the infection is an established fact?

First: If the stomach is full, it should be emptied. The best means of accomplishing this result is to have the patient drink hot water freely and copiously. Introduce the finger or a spoon back into the pharynx if necessary, to start the process of emesis. Keep this sort of auto-lavage up until the water returns clear, the stomach pump is rarely necessary. The hot water cleans out the stomach and at the same time, sedates the mucosa. If the nausea continues, use small repeated doses of menthol or 30 drops of a mixture of equal parts of spirits of camphor and spirits of chloroform in a little cold water, at intervals.

Best of all, perhaps, is 10 drops of pure chloroform on a teaspoonful of shaved ice. Repeated as judgment dictates. If violent pain and nausea persists, and does not respond to the above line of treatment, in rare cases small doses of morphine by hypo may be necessary. Local applications are of some value, if there is much tenderness. For example, hot compresses or applications of mustard. Purgatives should not be given by the mouth at this stage. No food should be given for 12, 24, or 48 hours, depending on the case. After two or three days, daily colonic flushings with hot normal saline solution is excellent. As soon as the stomach quiets down and the pain and nausea are relieved, we should begin the use of salines. Effervescent citrate of magnesia is palatable and excellent, draw doses of sodium phosphate in four to 8 ounces of hot water, every four hours is good, use the plain salt or the granular effervescent form. Some men like a dose or so of castor oil just at this stage. Urotropin in five grain capsules every four hours, as this drug acts as a disinfectant in the biliary tract, and should be used in every case. Usually about the second day, we begin to give food by the mouth, cautiously, using such things as hot weak tea, buttermilk, gruels made from cereals, etc. Very gradually returning to the customary diet, as the patient improves. The salts of

soda or magnesia or a combination of these, should be kept up at appropriate intervals until the patient is well. So likewise should the urotropin. If we are aware of the identity of the offending organisms, vaccines or bacterines (stock or autogenous) should be used after the more acute phase is passed.

Where the infection is not a local affair, but is part and parcel of a systemic infection, is in fact, a complication or sequel of such infection, the treatment is the same. It is modified of course, by the condition and possibilities of said infection in a given patient.

Second: Treatment of the sub-acute and early chronic stage. The gastric crisis of this stage should always be treated along the lines laid down above, according to their severity, but we should not make the mistake of stopping here. To treat the attack and do nothing in the interim, as is too often done, is neither scientific nor satisfactory. In the first place, we must take strict account of this patient's metabolism. We must see what classes of foods he can handle the best. We must, if possible, ascertain by the well known tests, what degree of functional impairment is present in the liver. We must know whether the kidneys and the intestinal tract are participating or not. And we must at least, try to find out whether it is a temporary or permanent impairment that we are dealing with.

All of this, you see, renders our problem more complex, and necessarily prevents us from laying down any iron clad inflexible rules that will apply to all cases. Yet in the main, we may outline with considerable confidence, certain specific indications, which will prove of the highest value, especially if formulated in the light of scientific facts, revealed by the investigation of the patient's metabolism. Briefly, the chief of these indications are as follows:

(a). Diet. In most instances it is best to cut down the nitrogen intake. This in a measure lessens the strain on the liver by diminishing its work. The extent to which this must be carried is determined by estimations of the capacity of the patient to eliminate nitrogen. All greasy and acid foods should be eliminated, as in a great many instances we have hyperchlorhydria as a symptom. A diet consisting chiefly of milk, cereals, and the simpler vegetables is good as a standard. We may add to or vary this as we study the patient's idiosyncrasies and his tolerance.

Personally, I think the less meat the better, especially should we forbid tripe, sweet breads, veal, liver, lobsters, crabs, potted or deviled ham, fresh pork and sausage.

(b). Rest. Violent exercise or hard work increases the liability to acute attacks, so a modified rest treatment is best in the beginning, allowing mild or moderate exercise, as

the patient improves. Great stress is laid on the value of rest at Carlsbad, where they are said to treat from 10,000 to 15,000 patients a year.

(c). Drugs and the mineral waters: The value of salines and alkaline minerals in solution in water has been recognized almost from the dawn of medical history. They tend to neutralize the excessive acidity of the gastric juice. They reverse temporarily, the osmotic current in the mucosa. They squeeze out the watery elements, thus reducing stagnation and congestion in the mucous membranes and the blood vessels of the intestinal tract, and finally, they relieve congestion and portal tension in the portal circulation. They reduce the catarrhal process in the stomach and intestines. They render the bile more fluid and in a measure, stimulate its flow, washing out the liver as the old practitioners call it.

The salines must be used freely, frequently and best on an empty stomach, say one-half hour before breakfast, mid-forenoon, mid-afternoon and a while before retiring. Patients may frequent springs or resorts, where the natural waters abound, or they may under the direction of a physician procure the chemically pure mineral salts and add measured quantities of water, and take this at appropriate intervals. The sodium salts are the best, the phosphate of soda, the sulphate of soda and the bicarbonate of soda. The sulphate of magnesia is also excellent. A good working formula would be about as follows, C. P. Magnesium sulphate, 2 parts, C. P. sodium sulphate, 2 parts, C. P. sodium bicarbonate, 2 parts, dose a teaspoonful to a tumblerful of hot water. The chemically pure artificial Carlsbad salt is perhaps as good as any.

The amount of water and the amount of salt used per day must be under the supervision of a competent doctor, as you may do more harm than good by using too much or too little. If the above means are properly used, a very large number of the sub-acute cases will get entirely well. In other cases, we may arrest the pathologic process and relieve all the symptoms.

If your patient after a reasonable trial of the above methods, one to three months depending on the type of case, fails to improve, perhaps loses weight slowly, the attacks are still present, and may be severe and frequent, moderate fever is still present during the crises, strict medical treatment should now be abandoned, and the case passes on into the next stage or phase.

Third: The stage of complications or the late chronic stage. Whenever a given case reaches this stage of the disease, such a case should be managed conjointly by the internist

and the surgeon. Suppose the case has persistently resisted intelligent medical treatment, and belongs to one of the following type:

- (a) Chronic cholangitis without stones.
- (b) Chronic cholangitis with stones.
- (c) Chronic cholangitis with stones and possible adhesions.

Now in these instances, as a rule, some form of surgical procedure may be decided upon unless, of course, some serious trouble of the heart, blood vessels, or kidneys which would render surgery dangerous, is present. But in all of these types, surgery must be followed by prolonged medical treatment. For in a great many cases, as all of you know, you may operate and find no stones, and still the operation be justified. You may operate and remove the stones; and in either instance the crises or attacks may recur just as before the operation. And in addition, there may be adhesions, hernias, or fistulae, as a result of the operation.

So then I repeat, when the critical time comes, what is best to be done, must be decided by the internist and the surgeon conjointly. And if the best interests of the patient is to be served, both of these men should be skilled and experienced in their respective lines. Work of this class is beyond the scope of that tenderfoot in surgery, the occasional operator.

Empyema, gangrene, rupture with or without peritonitis are complications that are prone to occur all too frequently at this stage of the game, constituting a type of acute surgical abdomen.

In the face of such complications, immediate surgery offers a chance. In most instances, however, the time for permanent good is past.

CONCLUSIONS.

The good that the internist can do in infections of the biliary tract is:

1st. To learn how to recognize them early.
2nd. To learn how to treat them when recognized.

3rd. He must get the fact firmly fixed in his mind that with but few notable exceptions, all infections of the biliary tract previous to the stage of complications, are medical and curable.

4th. He must learn that complications, the events which commonly bring the surgeon into the case, are not infections *per se*, but are the result of infection and are in every instance, preceded by long periods of disturbance, in which medical measures are all sufficient.

5th. He must learn that even in protracted and progressive cases, the intelligent and up to date internist may, by clinical means, forecast serious complications and in a measure at least, forestall them by calling a

surgeon into the case, before the pathology has progressed to the point where it is obviously impossible to do the patient any material good.

DISCUSSION.

W. W. Anderson, Newport: It is hardly possible to say anything except in praise of these excellent papers, but neither the society nor the essayists are particularly benefitted by throwing bouquets.

One point made by Dr. Jenkins I would like to object to. He advises the use of hexamethylenamin or urotropin in cases of cholecystitis. The experiments of Burnam and others, it seems to me, have definitely and finally disposed of that question. It is true that hexamethylenamin, when administered five grains, three or four times a day, can be found in all the tissues and fluids of the body, but that does not prove it is doing any good in any of these tissues. It is well established that almost all sorts of germs will grow in solutions of hexamethylenamin stronger than you can get into the bowel. It is not the hexamethylenamin that disinfects, it is the formaldehyd, and it does not become formaldehyd until it reaches the kidney, so that hexamethylenamin found in the secretions of the gall bladder does not prove that it has any value whatever, and the use of it there in my own hands and others whose practice I have inquired into has been that it is absolutely of no value whatever.

It seems to me, the thing that the surgeon does in treating cholecystitis, except when he does a radical operation of entire removal of the gall-bladder, is to establish drainage. Practically that is all that he does. Therefore, if the internist can secure adequate drainage by the use of his salines for instance, he is accomplishing the same thing. But notice, I say, if he can secure adequate drainage, and frequently he cannot. Most frequently he cannot. Our patients need to be given the opportunity of the drainage by the salines, and they need to be cautioned and taught how to protect themselves from irritations by excessive food and improperly eaten or masticated food; but when we have done these things, when we have regulated the diet and habits of eating and working, give adequate rest and saline drainage, if the patient is not relieved, the best thing the internist can do for that patient is to call a surgeon.

C. W. Dowden, Louisville: We have certainly listened to two most excellent papers, and I want to discuss particularly the paper of Dr. Jenkins on medical treatment. I am glad to say, I am thoroughly in accord with every word he has uttered. There are one or two points I want to make. The close proximity of the pylorus, the pancreas and the bile ducts make all these organs susceptible to infection, and so far as I know, there is not a single symptom that is pathognomonic of disease of any one; I mean by that,

that any symptom that may present, may come from disease in any one of the three organs. For that reason, it is important for us to make a differentiation as far as possible. Ten years ago I used to base my diet entirely on a gastric analysis after giving the Ewald test breakfast and what the contents of the stomach showed in regard to acidity. If I found hyperacidity, I gave an excess of proteins, etc. I had many failures; many of my patients did not get better, but worse. These were not cases of stomach trouble but of gall-bladder trouble, and hyperacidity usually occur in these cases. By giving them meat and other various proteins flooded the system with purins, and other proteins of that character, which kept up a constant irritation and reflexly increased the acidity of the stomach. These patients got worse instead of better. Notwithstanding the fact that we do usually have hyperacidity of the stomach, we must reduce our proteins and fats, and increase the carbohydrate intake, to supply the caloric needs of the body.

I can also agree with him as to the alkalies, and I use a mixture that is very similar. Urotropin will not do any good when used alone, and you cannot hope to get a cure from it, but I do believe that when you take care of the other details and correct things that are producing congestion in the gall-bladder, then your mild antisepsics, such as you get in urotropin, do good. I am absolutely certain in gall-bladder disease, I have had many cases in which no small benefit has come from the use of urotropin.

S. J. Meyers, Louisville: I want to thank the gentlemen for presenting these two excellent papers. While I am going to make a statement that may be considered unscientific, yet years of practice have convinced me that urotropin is the most valuable drug we have in our materia medica, and I feel like a great many other men feel that laboratory experience does not coincide with our clinical experience. We may be empirical in prescribing urotropin, but it is the most valuable drug we have. May be it does something a little different in the economy from what it does in the test tube in the laboratory. I am sure, if everything worked identically the same in the human economy as in the test tube, we would be giving olive oil to dissolve gall-stones and the surgeon would not be operating.

We find the drainage is the ultimate outcome in the cure of all these cases, and I believe the great majority of them get to the surgeon ultimately, and it has been my practice, after these people have had one or two attacks, to refer them to a surgeon if possible and get them relieved. I believe relief should come early; I do not think they should be allowed to suffer any more than a patient with hemorrhoids ought to be treated palliatively, because we know, sooner or later, the ultimate relief of this condition comes from surgical treatment. I advise these patients, after a diagnosis is made, to have surgical work

done. I do not believe that outside the discomfort excessive food causes, that regulation of the diet and the rest given these parts will cure these patients.

Dr. Abell has told us that in these cases we have to deal with an infection, and unless we stop it in the first or second attack, I do not see how medicine can give permanent relief, and the condition therefore becomes a surgical one. We know that these patients do not die, but they go on having one attack after another, and I believe, to make them comfortable, early surgical intervention is indicated in every case.

A. Sargeant, Hopkinsville: A fellow from the trenches like myself feels a little embarrassed in discussing papers by gentlemen who are doing this special work. I wish to discuss only the medical aspects of the paper presented by Dr. Jenkins. I would like to go one step further than he does. He introduces us to the patient in the throes of an attack of cholecystitis, and then raises the question, what will you do? He answered that question. In my judgment, the treatment should go farther back. The condition is one of autotoxemia, and the autotoxemic patient has to be overhauled; his dietary has to be changed; he has to change his way of living. We are all too well fed in this country. We have too many starches; we use too much sugar; we have too much acidity. We have too much of that and too much of this, and not enough oxygen. We are getting our living too easily.

As to the treatment, I thoroughly agree with the doctor, but as to the diagnostic points I believe that I can add just a little he did not mention. The spinal reflexes, if tested, will almost unerringly point to infection. If the infection is in the gall-bladder or in the common duct leading from the gall-bladder, you will find abdominal tenderness, muscular tenderness, and you will find the nerve supply to that region comes from the eighth dorsal on the right side, and if you will go to that point you will find a point of tenderness and find the point of exit. If you go to a patient you find pain radiating upward, as it sometimes does to the shoulder, but if you trace the pain, you will find it comes from the eighth dorsal, you can positively say there is no lung trouble, no pleuritic trouble, because tenderness referred from the lungs must originate from the second and third to the fourth dorsal. If you find your tenderness on the right side, it is also referred to the region of the appendix; then you should investigate your spinal center. If the hot box in the spine is above the twelfth, you have no appendicitis.

If you want to give relief from the immediate pain, I do not like to give morphin because it locks up the secretions, it covers up the symptoms, it lulls the patient into a security which is not real. I prefer at once to empty the stomach thoroughly and empty the colon because it is my belief that is the infecting point. The infection

commences in the colon and is caught up by the liver in an attempt to protect the organism from poisons and toxins. I forbid all food. I clean the patient out above and below thoroughly, stop food entirely, then turn my attention to the spinal center, the eighth dorsal, and direct pressure over the spinal nerve will relieve pain. I take a piece of ice, make a cone out of it to fit the hot box, and press it there for three minutes until it is cold, then reapply it for five minutes more, and the pain disappears, the patient is comfortable, then you are ready to proceed with the treatment. These cases are entirely surgical and should be referred to a surgeon if you cannot put them upon a diet and line of living compatible with their surroundings.

John R. Wathen, Louisville: We have listened to two excellent papers and have been greatly benefitted by them. I hardly think that any of us can differ with the essayists either from the standpoint of the internist or the viewpoint of the surgeon.

I was very glad indeed to hear the internist say and also the surgeon that the principal thing to do in the way of treatment in cases of infection of the gall-bladder is to remove the infection. If there is anything the internist can do it is to remove early infections before late results have occurred, and it was only a few years ago when the internist almost universally took the position that he could benefit these cases of gall-bladder disease and gall-stones by local means or medical measures, when we know to-day that of course surgery is the proper thing.

Now, the only question in my mind in regard to the surgical work is whether we can completely remove all infection in these cases of cholangitis. It is not an infection primarily of the gall-bladder alone; it is an infection in the bile ducts and throughout the liver.

It is only recently that William J. Mayo called our attention to the unfortunate results which sometimes follow cholecystectomy and Rolleston in his recent book on biliary cirrhosis in contradistinction to portal cirrhosis lays special stress upon that interesting phase of the subject. If there is anything the internist can do, it is the removal of the infection.

When it comes to surgical treatment, I do not believe that with the pendulum swinging in favor of cholecystectomy we have done enough. Removal of the gall-bladder removes but one source of the pathology, but does not remove diseases of the ducts beyond and about the liver, and I believe if we preach and advocate cholecystectomy for the average surgeon, which is a difficult operation, we will do something which we should not, because if it is undertaken by the average operator it will not be a success, and the mortality will be much higher. The operation is much more difficult than a great many practitioners think.

In my work I am doing about 50 per cent cholecystectomies and 50 per cent. of cholecys-

tostomies. I have noticed a peculiar observation which I have not seen recorded, that is, following cholecystostomy, simple drainage of the gall-bladder, the patient gets well faster than from cholecystectomy. He improves more rapidly, his digestion is better, and the infection is removed; whereas when we take out the gall-bladder, his convalescence is slower. In few recent cases of cholecystectomy, four in number, I have not only taken out the gall-bladder but have introduced into the cystic duct, in preference to the common duct, a small catheter for long continued drainage, and I believe these patients are very much benefitted, especially those in whom their trouble is associated with chronic pancreatitis, and that class in which we have the strawberry gall-bladder. Where we have no stones, but where we have enlarged glands around the common and cystic ducts, we remove the gall-bladder and these sentinel glands, which means that we have a cholangitis in the ducts themselves. These are the cases where the gall-bladder should not only be removed but we, at the same time, should drain through the cystic duct and in my future work I shall drain at least fifty per cent of my cholecystectomy cases through the cystic duct.

I am especially interested in this subject and am doing this work constantly, and inasmuch as I have recently had my own gall-bladder removed, I think I can better appreciate the situation.

Louis Frank, Louisville: I agree with Dr. Anderson that bouquets do not help the society, but I would rather have my mead of praise while I am alive than after I am dead. I want to express the opinion which I know we all feel that we have had presented to us to-day two papers that have given us the best thought of the profession and are right up-to-date.

I agree thoroughly with what the gentleman said who read the paper on "Medical Treatment." I did not hear the earlier part of the paper and the picture he drew, but I do certainly think that there is a tremendous field here for the internist and for the surgeon to work together. If there is one class of cases we talk about in which the general practitioner and surgeon should get together, it is those under discussion. If we study our deaths and results in connection with the surgical treatment of gall-bladder disease, we will find, when we exclude those cases that die undoubtedly from infections, in the vast majority of instances death could have been prevented if we as surgeons had been associated with general practitioners on the job. They die of acidosis, a condition which is very largely preventable, and which may come on some days after operation. Here is a condition which confronts us in which the closest association and the closest observation are necessary.

A year or two ago there was very little said about a paper touching the surgical side of the subject as between cholecystectomy and cholecystostomy, yet to-day I hardly know where I stand.

About twelve years ago I advocated most strenuously the removal of the gall-bladder and compared it to the appendix. I changed my point of view and thought we should do cholecystostomy in many of these cases, so that I hardly know to-day where I stand. I think I occupy a middle ground, but I am doing more and more cholecystectomies. The operation of cholecystectomy has not a higher mortality in cases where it should be done than the operation of cholecystostomy, and if we study the statistics of men of large experience, the Mayo Clinic having probably the largest individual experience in this or any other country than any one man, we find the tables reversed. I am sure, Dr. Abell and Dr. Wathen will recall a paper presented by Dr. Charles Mayo in which he showed that the low mortality which he formerly had with cholecystostomy now obtains in cholecystectomy, and that the high mortality formerly associated with cholecystectomy now obtains with cholecystostomy. That is a most significant thing, and what does it mean? It means we are following along the line of Ochsner's teaching in regard to appendicitis; that in those cases that we formerly thought should be cholecystectomized, the gangrenous cases, the cases full of pus, we now do as little as possible. We open and drain them. They are the dangerously ill cases. They are the cases that die even from cholecystostomy. The cases that formerly got well with drainage, we now take out the gall-bladder with a very low mortality.

I agree with Dr. Wathen that cholecystectomy is not a simple operation. The indications for the operation are, first, the skill of the operator; second, pathology which is present and third, the conformation of the patient, which the essayist has touched upon.

Frank Boyd, Paducah: Why the President called on me to discuss these papers I do not know. I do not do gall-bladder operations by the hundred, but annually about a dozen or more. However, I have some views in regard to what should be done with the gall-bladder that Dr. Abell has very clearly brought out; but there are some things in that relation that we as surgeons are confronted with, especially those of us who meet the average case and handle them frequently, and it is better for us to have a fair and clear understanding as to what we should do.

I am very careful indeed about removing any gall-bladder unless it is gangrenous. If there is a possibility of restoring its function, I would not remove the gall-bladder. In removing the gall-bladder we may have stones back in the hepatic duct; we may overlook stones in the common duct that will continue to give trouble. If you go back in there after the gall-bladder has been removed you will have a big job on your hands. If, unfortunately, the pancreas has needed drainage for an extended period, cholecystostomy is certainly in my judgment the best operation. There is one other thing in that regard. Let us take an im-

mense gall-bladder, with cystic duct obstruction, with several stones in the gall-bladder with the patient distended, has a high temperature, with rigors, with the excruciating pain that goes with the condition, it would be well if we could to remove that gall-bladder, but the patient is in such a condition that we cannot do it.

I recall a case I had a few months ago where I could feel three large stones in the cystic duct; the gall-bladder was five-eighths of an inch thick and contained eight ounces of pus. I drained the gall-bladder, got the patient off the table, and she made a beautiful recovery. She had no more pain after the operation and she expressed herself as having been relieved. I explained to her that it would be necessary for her to have another operation, which was disappointing to her of course. When I reoperated that patient I found a gall-bladder as nearly normal as any gall-bladder I ever saw. It was in an absolutely good condition; I removed the gall-stones from the cystic duct, three large ones, put in drainage, and treated it as an original case. She has had no trouble since then. She came back from Memphis a few days ago, I saw her, and she told me that she had had no trouble.

After once you remove a gall-bladder, you cannot put it back. If the gall-bladder is retained, you can go back a second time and do a second operation. I believe in giving a patient the benefit of the doubt in the majority of cases.

Our surgeons have vacillated on this question. They started out and did cholecystectomy, and then switched over to do cholecystostomy. Now, they are coming back and doing cholecystectomy again. The individual surgeon, who is successful in relieving patients, who gets good results by the operative methods he pursues, should use his own judgment in regard to these operations. If the gall-bladder needs to come out, it should come out. I would disagree with what has been said in regard to the difficulty of removing the gall-bladder. There are gall-bladders, of course, that are exceedingly difficult to remove, but the ordinary gall-bladder is not difficult to remove.

P. H. Stewart, Paducah: I have not had a very extensive experience in gall-bladder surgery, but my observations lead me to believe that our knowledge is limited, and our judgment is not dependable in doing cholecystostomy or cholecystectomy. I have had some cases in which I did simple gall-bladder drainage, and was forced to go back and do cholecystectomy, because my foresight was not as good as my hindsight, and in other cases I have operated, my judgment was to do a cholecystectomy, but being in doubt I gave the patient the benefit of that doubt, and the patient got along nicely. I do not believe the surgical profession is able to state positively to-day what cases should have cholecystectomy and just what cases should have cholecystostomy. As Dr. Boyd has stated to you, there is a swing of the pendulum. The pendulum evidently has swung too far in favor of cholecystostomy, and it is

now swinging too far in favor of cholecystectomy; but with the investigations that are being made in the large clinics of our country and European clinics, especially in the Mayo Clinic at Rochester, I believe the time is coming and will be shortly at hand, from their investigations and from the investigations in other hospitals and clinics, when the surgical profession will be able to state positively to a patient that this gall-bladder should be removed at the primary operation, and that gall-bladder should remain with simply a cholecystostomy. My experience is that if the gall-bladder is seriously infected and involved, as was brought out by Dr. Abell, the safest procedure for that patient in every way, so far as subsequent comfort in life is concerned, is to do a cholecystectomy at the primary operation, and if I am in doubt in the case I will do a cholecystostomy.

William A. Jenkins, (Closing on his part) with reference to urotropin:

Urotropin is a remedy of undoubted value in certain types and certain stages of the condition spoken of in my paper. Of course, urotropin, vaccines, drugs or any other therapeutic measures will do no good in end stages of said conditions when, for instance, the gall-bladder and possibly even the walls of the large biliary ducts have been changed into scar tissue and are stiff and thickened as a chestnut burr.

Urotropin in connection with the appropriate vaccines, is of assistance oftentimes in clearing up low grade infections of the biliary passages. Take for example the disinfection of the so-called typhoid-carriers which is a case in point. Similar therapeutic measures are efficacious at the proper stage of infectious conditions of these parts, when due to other organisms, and I am convinced, as I said above, that if used in the right place and at the right time, urotropin is of distinct therapeutic value.

I expected the remark that Dr. Meyers made would come from some of the surgeons rather than from an internist. However, the surgeons have been very generous in their treatment of me in this paper. I said in the first place that I intended to be very careful to keep strictly to the medical side of the subject.

You may be sure that whenever we have a gall bladder full of stones or the so-called strawberry bladder with thickening and infiltration of the large biliary ducts, the presence of adhesions, and possibly disease at the head of the pancreas, we know of course, that such conditions are not medical, but you may depend upon it, that such a patient did have so-called stomach trouble and many other readily recognized signs which I mentioned in my paper, and which, if the internist were sufficiently up on the subject, he would have been able to recognize and diagnose.

All such cases in a much earlier stage, would have been curable and strictly medical. Every patient with a chronic biliary condition, with or without stones, which presents a surgical aspect,

has always been through a prolonged preliminary period, during which time said patient has been to his family physician numbers and numbers of times, and has simply been put off with a little medicine for his stomach, when, as I contended in my paper, a thorough, careful study of his case at the proper time would in a great majority of instances, do away with the necessity of surgery and cure the patient.

Many years of experience in hospital and private work convince me that I am correct in the above statement.

Irvin Abell, (Closing): I think the attitude taken by Dr. Jenkins is sound and logical, and all of us will have no difficulty in recognizing and commending it. Just as he has stated, surgery of the bile ducts, as it is done at the present time, is largely the end result, not the surgery of the primary condition but of chronicity. I outlined in one of my conclusions the duration of the disease, and particularly chronicity, and stated it is the principal cause for doing cholecystectomy. There are men and women with gall-bladder trouble who give a history of gastric distress extending over weeks, months, and even years; they are the ones who present the contracted, thick-walled gall-bladder. That is an end result.

In defending our attitude of cholecystostomy or cholecystectomy, when we ultimately consider the whole question, it brings us back to the original proposition, what is the function of the gall-bladder? Has it any? It has been noted in animals—and this observation has been made in the human being who has been subjected to cholecystectomy either by the surgeon or disease—that the common duct is very greatly enlarged, and the sphincter which surrounds the common duct at the ampulla of Vater which normally resist quite material pressure before it will permit fluids to pass from the common duct into the intestine, becomes very much dilated. If the gall-bladder really has a function, why not treat it as we do the kidney or any other important organ? If disease has so modified its function that it is a menace in the individual, let it come out. On the other hand, if disease has not so modified or destroyed its function that there is a possibility of restoration, let it remain. That is the crux of the situation at the present time, and to treat each case intelligently we must be able to determine from inspection or from microscopic examination made at the time whether the gall-bladder has been destroyed or is still potentially a functioning organ. The crux of the whole situation will be our ability at the time of operation to determine just the extent of destruction of the function of the gall-bladder and its anatomical conformation and makeup.

HOME TREATMENT AND CURE OF OPIUM AND MORPHINE ADDICTS, WITH TABULATED REPORT OF FIFTY-TWO CASES.*

By JOHN A. SNOWDEN, Winchester.

With your permission and indulgence, I wish to say a few things before reading my paper.

Wednesday at night fall, while the somber shadows of twilight were chasing away the lingering rays of a radiant sunset, I reached this interesting little city, and went at once to a hotel where an elegant room, gorgeously furnished, had been reserved for "safe keep," "up keep" and comfort, but sad to relate found my room occupied by a nice gentleman who fortunately had antedated my arrival. In modern slang had "beat me to it."

Two of the doctors whose acquaintance we made in our way to the city, were also anxiously looking for a place to rest and ruminate, where no one could molest or make them afraid.

The genial and accomodating clerk, witnessing our homeless and apparently hopeless condition seemed puzzled for a moment about the situation. His *levator labia superioris alaeque nasi* almost "threw a fit" but a happy thought soon permeated his cerebellum. A smile spread over his occipito frontalis, and with all the enthusiasm of Aelimeides he joyfully exclaimed "Eureka." He called a negro boy and told us to follow him without fear or falter. "Our "guide" grabbed my portmanteau containing a pocket handkerchief, extra collar and my speech for this occasion, "lit out" and said, follow me. In a few minutes we stood at the threshold of an elegant three story brick residence. The landlady with beaming countenance bid us welcome, and proceeded at once to make us comfortable and happy. We were led up a winding stairway consisting of 3-5-7- and 47 steps which brought us to the door of our temporary habitation, which was a neat little room in the shape of a Greek cross, containing three nice beds and other necessary furniture. The considerate carpenter had left a small window in the side of our room, evidently intended for light and ventilation. While the carpenter's intention were perfectly good, the little opening only served in a microseopic way its intended purpose. I have forgotten the location and name of the boarding house. Our brief sojourn however, was simply delightful, and should I ever be detained in Hopkinsville for a short or long period, I shall want no better place to feed and rest my weary body.

Forty years ago when the State Association was holding its session at Hopkinsville, I was

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

taking my first lesson in the study of medicine, and during all these years, this is my first opportunity to read a paper before this body of grand men and good doctors. I rarely miss a meeting of our county society, but as I just remarked, this is the first time I have ever been in labor or rather labored with our State Association. I feel, therefore, to be a timid blushing Primipara without tear or prolapse. The poet so beautifully said,

"Full many a gem of purest ray serene,
The dark unfathomed caves of ocean bear
Full many a flower is born to blush unseen
And waste its sweetness on the desert air."

Do I quote this stanza because Hopkinsville looks like a graveyard or this session of the State Association remind me of a funeral? No indeed, my dear brethren, but this is my express purpose, I would fain hope and believe when I shall have finished my task, you may discover that I am the little neglected flower, and decide here and now that you will be more attentive and observant in the future than you have in the years past and gone forever.

Last evening I attended and enjoyed the complimentary picture show, and on my way back to the boarding place, dropped in as a "looker on" at the dance hall, and as I sat there with ankylose joints and aching corns, and gazed with eager eyes on that dazzling scene of sparkling wit and female beauty these beautiful lines found in Shakespeare's *Adonis*, (or somewhere else) came crowding into my mind.

Backward, turn backward, oh, time in your flight,

Make me a boy again just for to-night.

I beg your pardon gentlemen for taking so much of your valuable time, I shall proceed at once to read my paper.

Not many words uttered by the human tongue are so sweet as the little word "Freedom." What a great day of joy and gladness it must have been with the hard-worked, sorely oppressed, ill-treated, Israelites when they went out from Egyptian bondage into a land of freedom and plenty. How the hearts of our forefathers must have beat with joy and gladness when the thirteen little struggling colonies determined to throw off the British yoke of slavery and oppression and declared themselves free and independent. And yet the slavery of which we now wish to speak is of far greater importance, magnitude, and significance than either we have just mentioned. I know of no king or despot so cruel and exacting as the opium and morphine monarch, and no slavery more abject and degrading than that of morphinism.

In my opinion one of the greatest laws ever

enacted by our National Congress is the one known as "The Harrison Anti-Narcotic Law." The enforcement of this much needed legislation is rescuing thousands and multiplied thousands of poor unfortunate victims from conditions too pitiable for description.

And just here I wish to remark, that a great many physicians have very improper conceptions regarding this class of patients. They seem to think that the opium, morphine, and cocaine, addicts are hideous criminals that ought to be arrested and severely punished by the strong arm of the law. Such opinions are unkind, extravagant, and unjust. I look upon these people as unfortunate and almost helpless victims of a habit that is nearly as strong as life itself, and they need, deserve and should have our kindest sympathy and most serious thought, help and attention.

My habit of method of dealing with such cases is briefly as follows: I keep a registration or case book, in which I take the name, address, physical condition, age, how long been using and what disease or condition existed when the habit was acquired, and who was the attending physician at the time, the daily quantity, how taken, by mouth or hypodermically. I then make a careful physical examination and at the conclusion of this examination, I place my patient in one of three classes, curable, incurable, or palliative.

It has been my experience and observation covering a period of nearly forty years that about seventy-five per cent. of all cases are curable, and of the remaining twenty-five per cent. the amount of the narcotic can be reduced in fifteen or twenty of the remaining cases. Of the fifty-two cases I treated the past year I have been able to reduce the dose in all excepting two cases, and only in one case has the dose been increased.

After getting the history and making the examination, should I decide the case to be curable, I make a little talk to my patient that is not original, has not been patented, or copyrighted. I look the patient square in the face and say: "My friend, do you really want to get rid of this mind, body, and soul destroying habit?" and most every one will answer firmly, "I do." Well my friend there are some diseases of which we can not always promise a cure, but in your case I can positively guarantee a complete cure, provided you are sincere and really in earnest about this matter. I shall not impose any hard task or ask you to do anything that will endanger your life, liberty, or well being, but I shall require you to deal fairly, honestly, and follow my directions to the letter. I shall not be cruel, unkind, or unreasonable, but I shall be firm and positive in my demands and methods, and while I shall be careful to cause you the least possible pain and discomfort, I can not promise

to carry you out of this trouble on 'Flowery beds of ease'."

The method I employ is not unlike the system that everybody uses in the treatment of these cases. Namely, reduction, substitution, elimination, and support. In my judgment, cannabis indica is the best substitute we have for opium. The use of this drug, I learned from a specialist some forty years ago, who treated and cured my two sisters who were addicts of the morphine habit, both of whom are now living and neither of whom has ever returned to the habit.

When using cannabis indica, if the drug is pure and not inert, the five following physiological manifestations should be observed: Appetite improved, a stimulating effect, soporific, diuretic, aphrodisiac. Should more than two of these physiological manifestations be absent then you can conclude at once that the preparation you are using is not reliable. In former years I used a tincture or fluid extract, of recent years I am using a tablet known as "The Cannabin Compound Tablet" formula as follows:

Cannabin	1-10	gr.
Zinc Phosphide	1-10	gr.
Strychnine Phosphate	1-40	gr.
Avenine	1-200	gr.

This makes a very happy combination, and you will observe at once it meets quite a number of indications in the treatment of those cases.

Comparing the home and hospital or institutional treatment, will say: that in case the addict has the money to spend it is my candid opinion that institutional treatment promises quicker results, but, cases treated at home where there is not so much restraint and where the will-power is brought into use, which by the way, is a most valuable asset in the treatment of those cases, where good nourishing food can be obtained, where the sympathy and moral support of relatives and friends can be had, and where more time can be used in making a cure. I believe in this class of patients, the cure is less painful and relapses less apt to recur. I have a patient just now, which illustrates this thought. A physician came to me recently desiring treatment for morphinism, he said he had been treated and dismissed as cured in a sanitarium in Louisville, one in Lexington and one at some place in Indiana, and like the poor woman, who sought relief at the hands of the Master, who had spent all of her living with doctors, and whose condition instead of being improved had grown worse, so this doctor came to me with his "tale of woe," so after many misgivings and perturbations, I decided to do the best I could for this unfortunate professional brother. Time and futurity

alone can tell what I shall be able to do for him. And just here I wish to state that doctors who are victims of this habit make the most troublesome, hardest to manage, and most unsatisfactory patients that come under our notice. The reason is quite apparent. The ordinary addict finds it difficult to get his "dope" and consequently it is not so easy for him to return to his vomit and "wallowing in the mire." But the doctor usually carries with him the weapon of his own destruction. And when he returns home at night tired and worn out he is so apt to seek solace and relief from this most deadly evil.

Will now conclude this primitive embryotic paper, with a brief summary of my year's work, with this class of cases. I have registered since March 4th, 1915, to September 25th, 1916, fifty-eight cases, ages from eighteen to seventy-eight years:

Females	37
Males	21
White	45
Colored	13
Cured, White 11, Colored 7.....	18
Relapsed, White 1, Colored 2.....	3
Discontinued Treatment	9
Died	2

Now taking treatment 32, of this number 14 are curable, 12 incurable, 6 palliative. The twelve that are incurable are briefly as follows: Registered number "2" colored woman 40 years old has an abdominal tumor, has been under treatment fifteen months, was taking one drachm weekly, has been reduced to one drachm in fourteen days.

Number "5," white man, 66 years old, just an old frame has been taking fifty-one years, has been under observation eighteen months, takes one drachm weekly, no reduction.

Number "11," white man 37 years old, has been taking seven years, takes hypodermically three to five grains daily, disease, carcinoma of the bladder.

Number "15," colored woman, 43 years old, been taking morphine 24 years, has been under treatment twelve months. She was taking two drachms weekly, has been reduced to ten to fourteen days. This woman is sorely afflicted with syphilitic trouble.

Number "16," colored woman 44 years old, has been taking eighteen years, has been under treatment twelve months. She was taking two drachms weekly, has been reduced to one drachm in eight days.

Number "19," colored man, 49 years old, has been taking twenty-three years, suffers from neuralgia and chronic rheumatism. This old negro is sorely afflicted. He takes one drachm every two weeks, no reduction.

Number "20," young white woman, 36 years old has been taking morphine twenty-

three years. At the age of thirteen she sustained a fracture and dislocation of the hip-joint, which has rendered her a cripple for life. She suffers intensely with dysmenorrhea, has been under treatment two years, has been reduced from eight grains hypodermically daily to one grain daily, which gives her as much relief as when taking eight grains daily.

Number "23," white woman 69 years old, has been taking morphine twenty-two years, was taking two drachms weekly has been reduced to one drachm in eight days. This woman suffers from chronic articular rheumatism, is in very poor health and will likely live but a short while.

Number "24," white woman seventy-two years old, has been taking twenty-two years, suffers from rheumatism, has been operated on for removal of uterine fibroids, takes three grains by the mouth daily, has been under observation eighteen months, no reduction in the quantity.

Number "26," white woman forty years old, has been taking fourteen years. Began taking to preserve a six months pregnancy which was successful. Had miscarried several times previously at six months uterogestation. This woman has been reduced from one drachm weekly to one drachm ten days. She is the most pitiable looking patient who comes to my office.

Number "29," white woman sixty-eight years old, has been taking morphine thirty-two years, began taking for articular rheumatism, takes one drachm weekly, has been under treatment fifteen months. No reduction in the quantity taken.

Number "30," white woman sixty-six years old, has been taking thirty-two years, began taking for hay-fever. Takes three to four grains, hypodermically, daily. She is an old maid and is one of the most emaciated persons I ever saw. No reduction in the quantity.

Number "31," widow woman sixty-four years old, had been taking thirty-three years. Has uterine fibroids, laceration, prolapsus-uteri. This woman is a doctor's widow, and takes a drachm weekly with no hope of cure or reduction.

Number "32," white man seventy-six years old been taking morphine twenty-four years, began taking for sciatic rheumatism, has been reduced from one drachm weekly to a drachm fourteen days.

Number "34," white man thirty-seven years old, been taking morphine twenty years. Began taking for a bite from a mad-dog has been reduced from two drachms weekly to one drachm weekly.

Number "44," white woman sixty-three years old, been taking forty-three years. Has been reduced from two drachms weekly to

one drachm in ten days. This is the most sorely afflicted woman that I have under treatment. She suffers from chronic articular rheumatism and unhealed fracture of the shoulder joint at which point there is a fistulous opening has an ankylosed knee joint.

Number "51," white woman fifty-three years old, has been taking thirty-one years, began taking for a chronic diarrhea gastralgia and ovarian trouble. Doctor's grass-widow, takes three to four grains by the mouth daily, very little reduction in this case.

Number "57," physician seventy-eight years old, health fairly good, been taking thirty years, began taking for insomnia and neurasthenia takes four grains daily has only been under observation three weeks can only hope to make a slight reduction in the quantity taken.

DISCUSSION.

E. A. Stevens, Mayfield: I had the honor of reading a paper on the Harrison Law at the last State Meeting of this Society, and I am more than ordinarily interested in the subject.

I agree with the doctor that the law is not perfect, and that there is an overzealous inspector now and then is beyond question.

I believe some of these people are curable under proper environment and that others are not especially where they live in the cities and when the craving comes on them they can procure a substitute, particularly alcohol.

I think some consideration should be shown old people who have had the habit for many years and will inevitably die if taken off. I know of two old people who were taken off morphine as a result of this law both of whom died in a few weeks afterward.

Inspectors should use some judgment in their investigation of these cases. Of course in cases of incurable and painful diseases there is no question about what should be done.

There is one thing I want to refer to before I close, and that is the report made by Dr. Bishop of New York City at the last meeting of the American Medical Association on the curability of these cases. He made the most pessimistic report I have ever heard. He took the position that these cases were practically incurable. He had had a wide experience in handling these cases and it is discouraging to read his report.

I do not believe they are as hopeless as he thinks if you can get them in dry territory and where there is no leak through the restrictions of the Harrison Law. There are plenty of places in rural communities where these conditions exist.

Grant McKeehan, DeKoven: I treated four cases myself last year, three the last of March and the first part of April this year, 1915, and one in July. So far I have had a cure. One man had taken morphin for eighteen years; he was taking two drams a week. I resorted to the Lam-

bert-Towns treatment. I gave him heroic treatment, cured him, and put him on his feet in one week's time. He had no chance to get any morphin or whiskey after I began treatment. If you have read the Lambert-Towns treatment you know what it is. Another man had used morphin for several years. He had his back (spine) smashed up in the mine seven years ago, he has been an addict since, he was anemic and very delicate. After he took this treatment he gained several pounds in the first month. He is well and looks ten years younger. Another man had been using whiskey for several years and had been using morphin for two years. He was taking about a dram in two weeks: I cured him. He gained in flesh and was much improved in appearance. He is a living witness to the cure and is attending to his business. Another man I treated in July I was called to see and found he was delirious and rolling from one side of the bed to the other. The people knew of these other cases I had treated. After I examined him I said, "No, I do not think I can handle the case." Then I decided I would try to do something for him. I put him back on his morphin, and gave him morphin without anything else for three days; he came back to himself, and then I told him I would give him nourishment and a little tonic for three or four more days with morphin. I gave him treatment and he is well and a living witness to-day. He weighed ninety pounds when I began with him. In two months after that time he weighed 132 pounds. He was about 52 years of age and had taken morphine twenty years. Those are all the cases I have treated.

B. P. Earle, Dawson: I do not know whether what I am going to say is exactly in line with the discussion on this subject or not, but I would like to ask a question or two. First, if any one can give me information as to whether the enforcement of the Harrison Law has caused any decrease in the importation of opiates or cocaine, or those medicines that come under the purview of the law. If it has not caused a reduction, it seems to me it is of very little benefit to have the law, because there are so many people like the desperate cases spoken of where it is cruel and inhuman to take it away from them. Unless by so doing the amount is lessened. If there is anybody here who has this information I would like to have it.

I think some plan or arrangement should be inaugurated by which those addicted to the use of narcotics, could be treated, and if so and it was demonstrated that their cases were incurable cases by reason of extreme old age, or incurable disease, let them be provided with a certificate so that any doctor could prescribe the narcotic and not feel that he was in violation of law. Let the general Government bear the cost of those not able to pay for their own treatment. The law should yet be so amended.

A. Sargent, Hopkinsville: Dr. Snowden is a

live wire and he has presented to us a most excellent paper. Instead of voting him thanks, we should punish him a little bit for, as he says, this is the only paper he has given us for forty years. He should have given us a paper every year for forty years. (Applause.)

As to the Harrison Anti-Narcotic Law, I favored it, but like every human endeavor to improve the world it is not quite enough. I cannot understand why they should be so strict with morphin and let paregoric in. I do not believe that any curable case should have morphin; the incurable people should have morphin and should not have paregoric. I have been reliably informed that forty gallons are sold in this city every week; that carries with it 20 per cent. of the equivalent of alcohol and the combination is much worse than morphin alone. I believe that the addict should never take over ten grains. Physiological metamorphosis of morphin is so slow that any amount in excess of ten grains per day is wasted.

I believe in every community like this—Hopkinsville, or any other city in the state of Kentucky—there should be one doctor elected to prescribe morphin for addicts, and that it should be unlawful or unlicensed for any other physician in the city to prescribe it to an addict. Then you get them under control. A great many of these people really need it. They ought to have it, but if they go from one doctor to another and get it, it is not known how much they get or what they are doing.

Personally, as to the treatment, I believe the reduction plan below ten grains is like cutting off a dog's tail piece by piece. I talk to these people and say if they really want to get cured I can cure them, but nine times out of ten they do not want to get cured. They think over their past experience and they want another drop. If they want to get cured, I take them into the sanatorium or hospital and eradicate, as far as possible, every bit of bromid or opium from their system; then give them five doses of bromid of soda, with orange juice and prunes, and a hot bath, and you will get them off the habit if they want to be cured.

Bob Overby, La Center: I do not know of any fixed rules of treatment for these cases, but most of them can be cured, and I think we should hold out our hands for their rescue, and prove our fitness in convincing them they can be cured; and the rule is they want to be cured and are willing to put themselves into your care.

Dr. Snowden is either very popular in his county, or there is something wrong or loose with the sources from which such an unusual number of addicts receive their supply; which seems all but self-evident to this great body. Dr. Snowden deserves great praise for having put forth such an effort and at least to have reached such a large number with such results obtained.

In Ballard I do not know of any cases that have not been cured, there was much effort put

forth when the Harrison Law came into effect by the doctors of my county to carry out the law in its entirety. When these unfortunates came into town we called each other by phone and put them next that they could hide or prepare to fix up the most effective spell needful for the occasion.

It was remarkable how readily they were, to do any thing to get rid of the stuff when we solemnly told them we would be prosecuted heavily to prescribe morphin to them, no matter how much we would like to from a personal standpoint, old friend-sake, etc.

I have not had a great number of these cases but what I have had makes the treatment surely worth while. All I have had have remained cured and the improvement shows for itself.

Milton Board, Louisville: This will be the only paper that your President will discuss, but by reason of the fact that I have been engaged for thirteen years in treating these cases, I thought it might be of some interest to the Association if I gave you my conclusions. I regret to state that these conclusions coincide fully with the report made by the distinguished gentlemen to the American Medical Association. Instead of agreeing with the essayist that 75 per cent. of morphinists are curable, I want to say here and now that 100 per cent. of natural morphinists are incurable.

I like to divide morphinists for convenience of their discussion into two general groups, which I like to call the accidental or acquired morphinists and the natural morphinists. What I mean by the accidental morphinist is an individual who by reason of long continued attacks, say shock following a severe injury or a serious surgical operation, or any of the accidental things which might lead to the individual getting morphin or being placed on the drug by the attending physician. This constitutes a small percentage of the great army of morphinists in this country. In that first group, the accidental, the acquired morphinists, if they have not been taking the drug too long, excellent results will be obtained, and permanent results have been, at times, effected. But of the larger class which I like to designate as "natural morphinists," I mean the individual with a nervous system so badly arranged, so to speak, that he takes to morphin almost as "a duck does to water." That makes up the large drug using class of this country.

A point was well brought out by the essayist when he said that the mother, the daughter and the granddaughter were morphinists. There is a neurotic temperament, an inherited tendency in this degenerated direction from which in my own opinion there is no escape if the individual is so unfortunate as to belong in that class. That is, there is but one escape. We are engaged in this country in a great propaganda for the elimination of disease by preventive measures. The eloquent speaker (Dr. Bloodgood) from Baltimore, the other night drew attention to the importance of early recognition of tumors and precancerous

states. We are engaged in the attempt to stamp out tuberculosis and in all other preventive measures, but I want to say to you, gentlemen, here and now, that the treatment of morphinism is the prevention of it. The treatment of morphinism is for the doctor to understand and appreciate that if he gives a single dose of morphin to certain neurotic individuals he is in great danger of making them habitues of the drug; that ten consecutive doses of morphin given to any individual, I care not how strong a nervous system he may possess, and you will be in very great danger of getting that man or woman over their limit. It may seem hard, but I want to say here, as I have said on the witness stand time and again in the prosecution of cases, I regret to see certain members of the profession who have set themselves up to treat morphinists in their offices, when, as a matter of fact, it has merely been a subterfuge to charge a fee to unfortunates addicted to the drug. I want to say here, as I have said on the witness stand, what becomes of the individual who is addicted to morphin is of small consequence—small in comparison with the making of morphinists which we will do if we do not stop the indiscriminate prescribing of these drugs. (Applause.)

The reduction of morphin is absolutely of no value except relatively as it may cost the individual a little more money. Time and again I and others who have treated this condition get these people into a state where we can control them, where we can know how much they are getting, which is utterly impossible in any other way. Time and again have I seen individual morphinists taking ten and twenty and thirty grains a day, and yet that could be reduced without any particular discomfort to one-eighth of a grain three or four times a day. But when you knock out the last prop, there is where the pinch comes. The reduction of the morphin is really of no consequence. I think about the worst patient I ever saw in my life was a physician who was satisfied with one-sixteenth of a grain.

I appreciate the fact fully that to the individual morphinist, the Federal law, supported by the state law will work and it is working a very great hardship and entailing very great suffering to the individual who is afflicted with this symptom of degeneracy rather than disease. But even if that be true, our greatest duty to my mind is to the great body of the people which we serve, and if we will educate ourselves and educate our people, we will stamp out morphinism by ceasing to manufacture these drug users in the future.

There is a prospect of cure in a limited number of the accidental class, provided they have not been addicted to the drug say longer than three to five years. Those patients who have been addicted to the drug for a longer period than five years, and especially if they belong to that great army, that great class of natural morphinists, are in my judgment, based upon thir-

teen years of experience, utterly hopeless so far as being of any value to themselves or to society, even if placed where they could not get another dose of morphin in their lives.

J. A. Snowden, (Closing): I want to thank the doctors, who have so graciously and kindly dealt with this little paper of mine and for the good things they have said about the paper. I am not sure that I understand Dr. Board's remarks in regard to the cure of morphine addicts. I think he said 100 per cent of those cases are incurable, and then later on in his remarks, he said some of them were curable.

I am glad to make this statement, perhaps few doctors who have been practicing medicine as long as I have, can make the same statement. My real name is John Snowden, a great many people who have known me through life, and know my fidelity to truth, regret very much that I was not named George Washington. (Laughter).

This is the statement which I wish to make, I have been practicing medicine nearly forty years, and in all this time I have never made a single morphine or opium addict. (Applause). I said in my paper, that the two first cases, to my notice, were two of my own sisters who took morphine for a number of years. We had a kindly family doctor, who did not believe in allowing people to suffer, and in his practice of more than thirty years, he made more morphine and opium addicts, than any man that ever practiced medicine in Clark county.

A word of explanation, when the Harison Anti-Narcotic Law first went into effect, at a meeting of the Clark County Medical Society, it was decided that only one physician should treat this class of patients in order that the doctors would not be imposed upon, by applying to a number of physicians for their supply of morphine and opium. So my good friends decided to tender this task to the speaker, and while it has not been altogether a rosy path, I am glad to say, that I have accomplished some good to these unfortunate, sorely distressed people.

Shell Shock.--Arthur V. Sarbo (Medizinische Klinik, September 17, 1916) states that in a proportion of cases of shell shock there is actual damage to the medullary centres and specially to those of the eighth, ninth, tenth and twelfth nerves, leading to deafness and loss of the power of speech. The damage is believed to be due to the driving of the medulla into the foramen magnum, and of the cerebrospinal fluid into the fourth ventricle. In addition the shock may cause a disturbance of the circulation through the medulla. In certain other cases there is fracture of the base of the skull which is the cause of the symptoms. In a large proportion of the cases recovery is complete and in some the return of speech is sudden, though this is not the rule.

PRURITUS; ITS CAUSE AND TREATMENT.*

By CHAS. R. LANAHAN, Louisville.

Pruritus as defined by accepted authorities is a perverted sensibility of the cutaneous nerves without demonstrable structural changes either in the nerves or skin. This necessarily excludes all itching incident to or dependent upon any inflammatory process, whether that process has its origin in parasitic invasion, constitutional dyscrasia, general toxemia or thermal conditions, and leaves only those conditions in which the pruritus is primarily the sole complaint. I say primarily, because the scratching indulged in to relieve the itching, may bring about changes in the skin, eczema, thickening, local infections, which are not, strictly speaking, part of the condition.

A sharp line of distinction between pruritus as a separate entity, a disease *per se*, and pruritus as a symptom is exceedingly hard to draw. In pruritus as recognized at present the only symptom is the sensation of itching. There is an endless variety of sensations ranging through all degrees of severity, from the very mild to the intolerable, included in the meaning of the term. It may be a simple irritation like that of contact with new flannel; it may be a formication, the sensation as of ants crawling over the surface of the body; it may be a simple tingling or burning sensation. They may be, and usually are intermittent and paroxysmal in character, but all of them during the paroxysms occasion an irresistible desire to scratch, which desire is intensified by the act. It is usually most pronounced at night, after retiring, when the patient has the time as well as the inclination to devote himself to an orgy of scratching.

The itching may be general or local, but is rarely universal. In the local type it is usually restricted to some definite region, sometimes to small areas as the palms and soles or the nose or ears or any single one of them. The most frequent example of the local form however, is that limited to the genital or anal regions. In the male to the scrotum, sometimes extending on to the perineum, sometimes manifesting itself only at the urethral orifice. In the female the whole region of the external genitals is sometimes involved. The labia, the clitoris and vaginal and urethral orifices may be subjected to intolerable itching, usually paroxysmal in character but sometimes more or less persistent. In pruritus of the anal region, we have a very persistent, intractable condition which is not so very uncommon. It occurs most frequently in

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

adult males, leading an active life and renders life miserable for them until relief is afforded.

Another peculiar manifestation of regional pruritus is that described by Dubring and designated by him. Pruritus hiemalis or winter itch. This condition is usually limited to the lower extremities but may, exceptionally, involve the upper extremities and trunk. It occurs mostly in persons having dry harsh skins. It begins with the approach of winter and continues persistently until a change of climatic conditions, either seasonable or regional, obtains. It disappears spontaneously upon the approach of warm weather or if the patient goes to a more equable climate. It is most common in the northern states and Canada but is sometimes seen in this latitude.

In the generalized types the whole body is seldom involved at the same time. The pruritus is sporadic, so to speak, varying in its location at different times, starting at one site and shifting the point of greatest intensity to some other part of the body. There are several distinct varieties of general pruritus: Pruritus senilis, occurring in old people whose cutaneous structures are undergoing the changes incident to the approach of old age, arterial changes, atrophy of sebaceous and coil glands, loss of adipose tissue in the panniculus, and loss of the normal elasticity of the corium; both pruritus or that form occurring immediately after a bath in persons having a naturally dry skin; and the various forms incident to general toxic conditions.

The origin of the sensation, which we nominate itching, is rarely situated in the brain or cord. It does sometimes occur, associated with other forms of hyperesthesia and paresthesia in hysteria and some cord lesions, or reflexly from some nerve irritation, in some other part of the body, but in the great majority of cases, the cause will be found in the immediate vicinity of the end bulbs of the peripheral sensory neuron. These end bulbs like all other cells of the body are bathed in lymph, from which they derive nourishment, and through which they receive stimuli. They are greatly influenced by the character of fluid, and the pressure excited upon them by the surrounding structures. Departure from the normal in the constituent elements of this fluid, and disturbances in the vaso-motor equilibrium will explain most cases of pruritus whether a symptom or a disease. Given a venous stasis whether there are visible manifestations of it or not, there is an imbalance between oxidation and oxygenation, a retention of the products of cellular activity, and a consequent diminution of the normal alkalinity of the part. This venous stasis may be brought about by interference with the arterial supply or by obstruction of

the venous return; by vaso-constriction or vaso-paresis, caused by a functional derangement of the vaso-motor nervous mechanism, or by external stimuli, thermal or physical. It may also be brought about by mechanical means, by pressure bandages, by tight clothing or by atrophic changes in the skin itself, loss of elasticity interfering with the normal resiliency of the circulation—loss of adipose tissue which normally accomodates for sudden changes in pressure from internal or external sources; and by sudden changes in barometric pressure, especially a sudden drop with the release of the normal external pressure. Who has not seen an itching, burning, frost-bitten toe which could and would accurately register a sudden drop in barometric pressure? This element of vaso-motor disturbance is the chief cause of most of the local types of pruritus that are paroxysmal in character.

The other element of change in character of the fluid medium, will explain most of the generalized forms. The presence of a substance not normal to the fluid, or one normally present but in abnormal concentration, will inaugurate the sensation of itching or aggravate a previously existing pruritus. I am referring here to substances brought to the site by the blood stream and not to metabolic products generated at the location of the trouble. The toxic substances may arise from any focus of toxine formation encountered in other general medical conditions the chief source being, as in general medicine, the intestinal tract. The absorption of the products of intestinal fermentation, of the products of putrefactive bacteria in the big gut, and of the toxins of intestinal parasites cause the largest portion of them. Other constitutional toxemias resulting from organic or functional diseases give rise to their proper share.

In Bright's disease we have pruritus, general in distribution, and sometimes very intense, particularly as the stage of uremia approaches. This varies in degree corresponding very closely with the other general symptoms of nephritis. In diabetes mellitus we have a similar condition, perhaps observed more frequently because the other symptoms are less distressing. Intense itching of the pudenda may be the first symptom calling attention to an unsuspected case of diabetes. Thus it is through the whole category of chronic toxemias, gout, Hodgkin's disease, Grave's disease, obstructive jaundice and so on. In all these conditions the toxine present, and circulating in the blood stream, bathes the terminal filaments of the sensory nerves, and their response to the irritation of the foreign substance is a message to the brain, which is interpreted there as the sensation of itching.

Pruritus may also occasionally arise from purely nervous causes, sometimes organic, sometimes reflex in character. A hypersusceptibility of the cutaneous nerves, occasioned by ovarian or uterine displacement or perhaps a floating kidney may cause exaggerated sensations from the slightest contact with external objects at any part of the body surface. A disturbance in the glands having an internal secretion may be the chief factor in some cases of this reflex excitability.

A summary of the causes of pruritus might be stated as follows: A functional perversion of the sensory nerves or an organic lesion somewhere in the path of the nerve; a departure from the normal in the character of the fluid in contact with the nerve ends; and an alteration in the pressure to which the end bulbs have become accustomed.

In the rational treatment of pruritus as in any other disease, the first indication is to determine the cause, and if possible, to remove it. Too often, little or no importance is attached to pruritus by the general practitioner. He pooh-poohs the idea that it can have any possible significance, and dismisses the patient with a word and a little carbolio acid, and forgets it. He may be called in a little later to treat a case of uremia or diabetic coma. No case of general pruritus is too insignificant to warrant a thorough investigation. Each case should be studied individually, keeping carefully in mind the various possible etiological factors in the condition. I am prone to believe that after more mature consideration and closer investigation pruritus will come to be regarded solely as a symptom; that the underlying cause will be more sought for; and that treatment will be directed more to the elimination of the cause and less to the empirical palliation now most generally in use.

If a toxic focus can be located, and diligent search should be made for one, eliminate that and in a majority of cases the pruritus will be relieved. If the location be the intestinal tract (which it most frequently is) an alkaline aperient will serve the double purpose of elimination and rectification of the attendant acidosis; errors in diet should be corrected and intestinal antiseptics used when found necessary. If it be an apical abscess or a diseased antrum of Highmore direct your treatment to them; if it be a cystitis or an endometritis direct the proper treatment to those conditions. It should be supererogation on my part to discourse at length on the treatment of pruritus in the systemic toxemias such as Bright's disease and diabetes.

In the functional nervous types general tonic measures with the elimination of the possible cause of a reflex irritation, correction of a retroversion or fixation of a floating kidney and the like, may relieve the condition.

Glandular extracts, thyroid, corpus luteum, are indicated if a deficiency of glandular secretion is manifest.

In the type characterized by the dry harsh skin, occasioned by a lack of oil or moisture, stimulation of the secretory glands of the skin may produce beneficial results. Massage, electrical and mechanical faradization or the application of any measure tending to render the skin more elastic is indicated here. It is in this form of pruritus where the elasticity of the skin is below normal, that modification in pressure plays a great part. The skin is unable to accommodate for a sudden change in pressure, whether it be osmotic pressure in both pruritus, or the release from mechanical pressure exerted by the clothing in senile pruritus.

Local treatment, with the possible exception of the actual destruction of the nerve ends, does not cure pruritus. It is merely palliative. Topical applications will almost always ameliorate the annoying symptoms temporarily, but they should be used as morphine is used in a broken leg, to relieve the patient only while the proper attention is given the underlying pathological condition.

DISCUSSION.

C. W. Dowden, Louisville: Such an excellent paper, and one of such interest to the general practitioners all over the country, should not be allowed to go without some discussion.

As the essayist has said, very little attention has been given to pruritus. If I understood him correctly, he divided pruritus into two classes, one a disease and the other a symptom. I am not a skin man, and he may be right, but I was trying to think of a case of pruritus which might be primary, and I have been unable to think of any so far. I believe it is always a symptom. That means of course, first of all, we must determine what is the underlying cause, and while I think I have talked enough on the subject of metabolism, I believe that a large majority of them are dependent upon disturbed metabolism. I am sure all of us will remember what Dr. Bloodgood said to us about the first messages concerning cancer. I think that the same thing applies very aptly to the general condition of pruritus. It is a message of something that really needs investigating and something that, if investigated, will many times prevent serious conditions later on. I am sure, Dr. Asman will bear me out that if every pruritus of the rectum had been investigated early, it would in many instances have led to an early diagnosis of cancer which, if handled at that time, would have prevented serious and dangerous operations later on and saved life.

The same is also true, as Dr. Lanahan has remarked, of nephritis and diabetes. If every physician would investigate the first slight attack of pruritus, particularly those coming on in the

latter half of life, I have no doubt he would discover a great number of cases of diabetes and Bright's disease which, if taken hold of at that time, would prevent serious results that follow later, and in many instances be the means directly of saving life. So I think a paper of this kind is valuable because it shows us that itching of the skin, should not be allowed to pass without thorough investigation. Even if it means nothing more than a pediculosis, the patient can be relieved in twenty-four hours. Let us remember, however, that this itching of the skin may mean cancer or Bright's disease or diabetes, and by recognizing it in the early stages we will save the patient burdensome and long-continued treatment, and be in a position to save or at least prolong his life many years.

Bernard Asman, Louisville: The paper presented by Dr. Lanahan is not only important, but interesting and timely. The general subject of pruritus has in the past been neglected to a greater or less extent by many of us. The suggestion made by Dr. Dowden, i. e., that the development of serious disease may oftentimes be prevented by adequate early treatment of pruritic lesions, seems to me a most excellent one.

Whether the lesion which we call pruritus should be classified as a definite disease or merely as a symptom, will depend entirely upon our interpretation of the term. Literally the word pruritus means an "intense itching," and when the definition is thus limited it can only indicate a symptom of some existing disease. However, it must be remembered that according to their literal interpretation, many of the clinico-pathologic designations now commonly used are inexpressive in that they fail to convey the full intended meaning. For instance, when applied to the anal region, pruritus would mean a symptom of some lesion present about the anus or within the anal canal; rarely is the lesion responsible for the itching situated within the lower rectal segment. However, when speaking of anal pruritus, I am in favor of extending the definition of pruritus to include the pathology. The correctness or incorrectness of this view, as already stated, will depend upon whether we classify pruritus as a symptom or as a disease. In any event itching may be regarded as the first recognizable symptom.

It is my first conviction that anal pruritus always owes its origin to a local lesion. Of course the pruritus which accompanies general diseases, such as uremia, gout, diabetes, etc., is purely symptomatic. When anal pruritus alone is found, I believe a local lesion is responsible for its production. There must exist some pathology within the anal canal (ulceration, hemorrhoids, blind internal fistula, etc) to produce the irritating discharge almost invariably noted which more or less constantly bathes the peri-anal region, and pruritus is the most logical outcome. Itching will continue so long as the discharge persists.

In an effort to secure relief from the intolerable itching, the patient resorts to vigorous scratching with his finger nails. Unsuccessful attempts are also made by the doctor to afford relief by various local applications. The unfortunate patient oftentimes does not find relief at the hands of the first, the second or even the tenth doctor, because the underlying cause of the pruritus remains undisturbed.

The scratching on part of the patient, together with the irritation from various local applications recommended by the doctor, soon produces an inflammatory thickening of the affected skin, with hardening of the exudates and consequent imprisonment of the sensory nerve endings. Therefore, in late cases to effect a permanent cure the diseased skin may require surgical treatment even after the original cause of the pruritus has been discovered and removed.

In the majority of instances I believe the cause of anal pruritus will be found in a blind internal submucous fistula. I say "submucous" fistula advisedly, because a fistula involving the deeper structures will be promptly recognized and treated, whereas a submucous fistula may be easily overlooked. The patient usually gives no history of an abscess, because a submucous abscess does not induce severe pain such as is caused by deeper abscesses. The reason for this is obvious, i. e., the mucosa being soft and easily distended, the pressure pain produced by deeper abscesses does not occur. A small abscess may rupture internally and thus produce a fistula; pus exuding from the fistulous tract naturally gravitates through the anal canal, thus constantly bathing the peri-anal tissues; itching and inflammation soon follow; the skin becomes markedly indurated and thickened, and a true anal pruritus then exists. In most instances, upon being asked in regard to dryness or moisture about the anal region, the patient will say that the "parts are always moist and irritated from the constant discharge."

In many early cases of anal pruritus, if the fistula is promptly eradicated and proper local application made to the skin, a cure may be confidently expected. However, in late cases where the skin has become much thickened and hardened, appearing almost like sole leather, portions of the diseased integument must be carefully dissected and excised to effect a cure.

As Dr. Lanahan has well said, too often patients suffering from pruritus are dismissed with "a carbolic lotion and a few words of advice." That is in large measure true of anal pruritus as well as other lesions about the ano-rectal region, although it should not be so nowadays when rubber gloves are so cheap. Some one remarked yesterday that "rubber gloves may now be purchased at the five and ten cent store," so there should be no excuse for not making a digital examination in every case where the patient is suffering from pruritus or other pathology referable to the ano-rectal region. Many lesions of this kind are

undoubtedly "precancerous, and if allowed to persist carcinoma may eventually develop in the manner so graphically described by Dr. Bloodgood the other evening.

I wish to thank Dr. Lanahan for his most excellent paper.

Chas. R. Lanahan, (Closing): I have very little to add to the discussion in closing: I tried to bring out the fact that the condition is always a symptom and should be so considered. The essential cause, as Dr. Dowden says, may be some obscure metabolic disturbance only revealed by careful and thorough interrogation of the patient's blood. I think the reason for ascribing to the sensation of itching without demonstrable cutaneous lesion, the character of a disease, lies in this very obscurity of the cause in these cases.

NEWS ITEMS AND COMMENTS

Dr. I. A. Shirley was lately elected County Health Officer of Clark County to succeed Dr. Russell Henry who resigned.

Dr. John Prather died at his home at Woodland Mills after several months of bad health, death resulting from heart trouble. He was about sixty-eight years old.

Dr. Howard Curtis of Hickman local surgeon for the Tennessee Central railroad, has gone to New Orleans, to spend February in the Tulane university.

The Clark County Medical Society met in the office of Dr. A. G. Cowles, on Lexington avenue, January 19th. Dr. Cowles read a paper on "Modern Diagnosis and Treatment of Amebic Dysentery."

Dr. E. R. Cole, Winchester has gone to Ashaway, R. I., where he will wed Miss Anna Crandall. The ceremony will be performed at the home of the bride. Dr. Cole is one of the leading physicians of Winchester.

Dr. and Mrs. W. S. Gabhart, of Mackville, and daughter, Lucile, have gone to Rochester, Minn., where Dr. Gabhart will take a four weeks post graduate course in surgery and medicine under the Mayos.

A message was received from Ebon, Morgan county, that a number of cases of smallpox and many had been exposed to the disease. Ebon has been quarantined by the Board of Health against the rest of the county to prevent the spread of the disease.

Dr. W. F. Phillips, who was stricken with paralysis a few weeks ago while teaching a Sunday School class, died January 19th. He leaves a wife, a son, his mother and two sisters, Mrs.

Nina Brock, of London, and Mrs. James Lucas, of Jellico.

Dr. E. R. Goodloe, of Little Cypress, one of McCracken county's best known physicians, has moved his family to Paducah and rented an office in the Brook Hill building, over the Paducah Banking company. He will also keep an office at Little Cypress. He will live at 1027 Jackson street.

Dr. W. O. Bullock, for a number of years president of the Lexington Board of Health, tendered his resignation to Mayor Rogers, his resignation which was promptly accepted. Differences with the administration relative to the selection of a City Health Officer are said to have precipitated his resignation. Mayor Rogers announced he would offer the vacancy to Dr. Charles A. Vance.

An interesting and instructive meeting of the McCracken County Medical Society was held in the office of Secretary Craig of the Board of Trade. Sixteen physicians and surgeons attended and several splendid papers were given.

Miss Amy F. Lowe, public health nurse, made a talk in which she offered her services to the society in any way possible. Dr. Delia Caldwell and Dr. E. W. Jackson gave excellent papers.

A tuberculosis survey, co-operation with the State Board of Health so as to get advantage of information concerning specific evidence of tuberculosis possessed by the Bureau of Vital Statistics and the laboratory and to avoid duplicating expenses; co-operation with the school authorities and with community and sociological organization, were proposed by Dr. W. L. Heizer, Secretary of the Tuberculosis Commission.

The regular monthly meeting of the Christian County Medical Society was held at the public library building. An especially timely and interesting program was given, viz:

"Lagrippe," paper by Dr. G. W. Lovan, of Crofton.

"Pneumonia," paper by Dr. O. E. Wright, of Kelly.

"Early Diagnosis of Nephritis," paper by Dr. D. H. Erkiletian.

On Thursday night, January 25th, the Central Kentucky Medical Association met at the Elks Club in Danville, in regular quarterly session and an enthusiastic and profitable time was spent in discussing a splendid dinner and medical papers.

Annual election of officers was held, the following being elected for the ensuing year; President, Dr. Virgil Kinnaird, Lancaster; Secretary, Dr. J. Tom Price, Harrodsburg.

Lancaster feels justly proud of her youngest

physician having this honor conferred upon him and we not only congratulate him, but the Medical Association upon their selection.

Dr. Philip Skrainka announces that he will issue a new medical monthly, the name of which will be *Medicine and Surgery*. In making this announcement, the editor states that he no longer wishes to have his name associated with an unethical journal as regards advertisements, and, in this new venture, he will have full control of all the pages of the journal which is owned by him.

It is a pleasure to welcome into the ranks of honest journalism the distinguished editor of *Medicine and Surgery* and to wish for him a hearty recognition by discriminating medical readers.

After a long illness, Dr. W. T. Lively died at his home in Buffalo, LaRue County, on January 18th. He was born and reared in Taylor county, being the son of Dr. James Lively, and for many years practiced medicine near Saloma, afterwards moving to Buffalo. He was noted not only for skill as a physician, but for liberality and great kindness of heart. Dr. Lively is survived by his widow, was Miss Jennie Styles of Taylor County, and three sons, Charles, Robert and Duke and numerous relatives.

Dr. W. G. Dailey, the well known Millersburg physician, and his colored chauffeur, were hurt in an automobile accident near the Freeman farm on the Maysville pike.

Dr. Dailey was returning to Millersburg from Paris, and the auto collided with an empty wagon near the Redmon pike, overturning the automobile, throwing out both occupants. Dr. Daileys chauffeur was thrown under the car and seriously injured. Dr. Dailey suffered a number of slight cuts and bruises.

Dr. C. H. Mullin, aged 77 years, died at his home at Foster, Wednesday morning, January 10, at 6 o'clock. Deceased was a native of Brown county, Ohio, his wife being a Miss Blair of the same county, who has been dead many years. Dr. Mullen served as physician during the Civil War, and located at Foster at the close of the war, where he has since resided. Two daughters and one son survive him—Mrs. Velma Hannah and Charles Mullen, Jr., who resided with their father, and Mrs. Nellie Griffin, of Bethel, O. Deceased had for many years been an honored member of the Masonic order.

That Kentucky's position in the treatment of the problem of its feeble-minded is unfortunately unique, in that it is the only state in the Union retaining the old system of turning out the mental defectives from its institution—girls at the age of 18 and boys at 21—and supporting them out of the state treasury away from the schools, was the declaration of Dr. Alexander Johnson,

a representative of the Commission on Provision for Feeble-minded, speaking at the First Christian church, Louisville. The speaker was brought to Kentucky by the Federation of Women's Clubs, while the meeting was more directly in charge of a committee recently appointed by Governor Stanley to investigate the problem, composed of Mrs. Morris Belknap, E. S. Tachau, Dr. H. E. Tuley, Frey Levy and Stuart Chevalier. He was introduced by Mrs. Helm Bruce to a representative audience of 200 persons, including Mayor Buschemeyer, members of the Men's Federation and others prominent in the city's civic, educational and institutional life.

The Louisville Eye, Ear, Nose and Throat Society meets at the City Hospital the second Thursday of each month.

March 8, 1917—What are we doing about deafness? Dr. Lawrence. Otitic Meningitis, Dr. Peabody.

April 17, 1917—Direct examination of Larynx with exhibition of Instruments, Dr. Levi; Intralaryngeal Surgery by the Direct Method, Dr. Lederman; Intra-laryngeal Surgery by the Indirect Method, Dr. Pelle.

May 10, 1917—Systemic Manifestations of Diseases in the Throat, Dr. Pfingst; How May We Know That Tonsils in a Given Case Are Diseased? Dr. Ray; Methods of Tonsilectomy. Dr. Pirkey.

June 14, 1917—Furunculosis of the External Auditory Canal, Dr. Ritter; Foreign Bodies in the External Auditory Canal, Dr. Robertson; Extradural and Perisinous Abscess of Otitic Origin, Dr. Shafer.

Sept. 13, 1917—Septic Sinus Thrombosis: Dr. Simpson, Symptoms and Pathology; Dr. Taylor, Prognosis and Treatment.

October 11, 1917—Cerebral Abscess of Otitic Origin: Dr. Weinberg, Etiology and Symptoms; Dr. Wright, Treatment.

The Louisville Eye, Ear, Nose and Throat Society cordially invites the specialists of Kentucky to attend its meetings, enter into its scientific discussions, and present cases and pathological specimens.

W. D. LEVI, Secretary.

Tuberculin in Ocular Tuberculosis.—R. B. Metz (Cleveland Medical Journal, September, 1916) in a group of ocular tuberculous manifestations records excellent therapeutic results, so far as the eyes were concerned, from the use of tuberculin in graded doses. The administration of tuberculin brought about apparent cure or marked improvement in five cases which were not benefited by the routine methods of treatment. The cases benefited or cured included two of phlyctenular conjunctivitis, one of phlyctenular conjunctivitis and scleritis, two of sclerosing keratitis, and one of sclerochroiditis.

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ASHLAND, 1917

COUNTY SOCIETY REPORTS

Harlan—The Harlan County Medical Society met at the Harlan Hospital January 27, at 8 p. m., G. P. Bailey, President in the chair. Other members present were E. M. Howard, W. P. Cawood, D. M. Fields, A. Jenkins, J. W. Nolen, W. W. Sneed, Wm. Martin, C. V. Stark, J. S. Locke, of Barbourville, our Councilor, made a very helpful address on the betterment of our county society. R. W. Holly, of Appalachee, Va., was with us as a visiting physician.

G. P. Bailey read a very interesting paper on "Pneumonia" and gave his treatment. General discussion by physicians present.

At 1:00 p. m., we retired to the dining room to partake of fruit and oyster supper which was enjoyed by all.

The society adjourned to meet at the same place February 24th, with a program as follows:

W. P. Cawood on "Anesthesia."

L. H. Boone, "Accidents During Anesthesia."

At 9 p. m., an old-fashioned mush and milk supper.

CHAS. V. STARK, Secretary.

Logan—The Logan County Medical Society was called to order by Vice President W. W. Lasby. Present, Piper, Wilkerson, Alderson, Sr., Alderson, Jr., Byrne, Sr., Kemper, Haberer, Lasley, Burr and Beauchamp.

Minutes of the last meeting were read and approved.

There were no clinical cases.

Walter Byrne, Sr., read a paper on "Pericarditis."

W. R. Burr read a paper on "Endocarditis."

Papers were generally discussed by those present.

Motion made by Dr. Burr and seconded by Dr. Piper that the society condemn giving of anesthetics by other than regularly licensed physicians. Carried.

On motion the society adjourned.

WALTER BYRNE, Sr., Secretary.

Pulaski—The Pulaski County Medical Society held its regular monthly meeting at Dr. S. F. Parkers office on Thursday, January 11, 117, at 10 a. m.

The following members were in attendance:

M. Warren, B. Weddle, S. F. Parker, J. A. Bolin, A. W. Cain, A. J. Wable, C. Norfleet.

After reading and adoption of minutes of last meeting the society proceeded to business

The following clinical cases were reported:

Brent Weddle, "Foreign Body in the Throat."

A. W. Cain, "Pneumonia Followed by Empyema and Resulting Tumor Mass at Margin of Ribs Near Liver."

S. F. Parker, "Lagrippe, Cough, Supra-orbital Pain, Acute, Glaucoma, Loss of Vision."

C. Norfleet, "Suspicious Cancer Cervix Uteri."

M. Warren, "Pregnancy, Eight Month, Pro-lapsus Uteri, Hemorrhage Since Third Month, Cervix Closed."

General Discussion of cases.

A. W. Cain read a paper on "Notes on Appendicitis."

Discussion by Parker, Wahle, Norfleet, Warren.

It was moved and seconded that Dr. Cain's paper, "Notes on Appendicitis," be forwarded to the Journal for publication.

There being no further business the society adjourned.

CARL NORFLEET, Secretary.

Wayne—The Wayne County Medical Society met on January 16, 1917.

John E. Douglas, of Monticello, was received into the society.

T. H. Gamblin, Monticello, comes back into the society after an absence of one year, and was elected President; John E. Douglas elected Vice President; J. F. Young Secretary and Treasurer; J. F. Young, Delegate to State Meeting; A. S. Cook, Alternate.

W. E. Woodrow and **C. B. Rankin** were also present and took part in the discussion of the paper.

We will meet the first Tuesday evening in each month this year.

J. F. YOUNG, Secretary.

BOOK REVIEWS

Intestinal Stasis and Constipation—By R. H. Ferguson, M. D., Sc. D., E. R. Squibb & Sons, New York, Publishers.

This handbook is intended to set forth, in a brief manner the consensus of opinion of the medical profession concerning the non-surgical aspect of the treatment of intestinal stasis and constipation.

Venesection, A Brief Summary of the Practical Value of Venesection in Disease, For Students and Practitioners of Medicine—By Walton Forest Dutton, Tulsa, Oklahoma. Illustrated with several text engravings and three full-page plates, one in colors. F. A. Davis Company, Publishers, Philadelphia, Pa. Price \$2.50.

This book describes in detail the procedure of venesection and its applications. The author gives not only his own experience but that of many eminent physicians.

Hay Fever, Its Prevention and Cure—By W. C. Hollopeter, A. M., M. D., L.L.D., Pediatrician to the Philadelphia General Hospital, Professor Pediatrics, Emeritus, Medico Chirurgical College. Funk and Wagnalls Company, New York and London, 1916. Publishers.

This book is very valuable not only to the physicians who have these distressing cases under

their care but is an excellent volume for the patients themselves to read.

The author has made a thorough and exhaustive study of the subject, a greater part of the book is devoted to the forms of treatment, there is an extensive bibliography and the book is thoroughly indexed.

A Text-Book of General Bacteriology.—By Edwin O. Jordan, Ph. D. Professor of Bacteriology, in the University of Chicago and in Rush Medical College. Fifth edition thoroughly revised. Octavo of 669 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, \$3.25 net.

This standard text book is used by the State Bacteriological Laboratory, and physicians having it in their library can better understand the reports that are received from Dr. South. It is a comprehensive and authoritative work on Bacteriology. It is not too long and every one should have it.

Abstracts from December Volume of International Clinics—J. B. Lippincott, Philadelphia, Publishers.—Surgical Experiences with Encapsulated Empyema and Abscess of the Lung; A plea for Exploratory Thoractomy.—By Astley P. C. Ashhurst, M. D., Philadelphia, Pa.

The author brings convincing evidence to show: 1, 2, 3, 4, as summary, p. 210.

Typical cases, well illustrated, are presented in the International Clinics for December exhibiting the difficulties of recognizing and reaching pus within the pleura even when exploratory puncture is resorted to, while it is made plain how much can usually be obtained by surgical means. Refusal to operate when the needle fails to reveal pus at the time set for operation even though pus was previously found is bad surgery. The surgical technique is carefully described. Local anesthesia is preferred, the intercostal nerves above and below the rib to be resected being blocked with an injection of the anesthetic fluid, novocain or eucain being preferred. For abscess of the lung thoracotomy is preferred to the production of a therapeutic pneumothorax by Forlanini's method as the former gives better opportunity for location and draining the abscess.

The Clinics of John B. Murphy—Published by W. B. Saunders Company.

Each copy of Murphy's Clinics that has come to us since his illness and death has made us realize more and more how much we need such a master both of surgery and of words. No one who does surgery can afford to be without his talk on varicose veins and varicose leg ulcers. A Clinic for the Baltimore & Ohio Railroad Surgeons also occupies a prominent place in this volume. Other sections are too numerous to mention, but we cordially recommend this work.

Ultra-Violet Light By Means of the Alpine Sun Lamp—Treatment and Indications by Hugo Bach, Bad Elster, Saxony, Germany. Paul B. Hoeber, New York, Publishers. Price \$1.00.

Although the use of the Alpine Sun Lamp has now secured an undisputed place in medicine, there is still much that is unknown concerning this new method of treatment. Comprehensive descriptions of its development and affectiveness have been published, but we still lack a brief description of things worth knowing regarding technique and a detailed review of its indications. A well illustrated chapter is devoted to a description of the lamp. A method of treating skin lesions is outlined and case reports given.

Cerebellar Abscess—By Friesner and Braun. Paul B. Hoeber, Publisher. Price \$2.50.

"Considering the recent advances made in our knowledge of cerebellar physiology and methods of diagnosis, and particularly of the relationship between the cerebellum and the static labyrinth, a work on cerebellar abscess is not untimely. This relationship we have described at length, trusting that it will interest the neurologist as well as the otologist."

With this purpose, the authors have prepared a practical, readable book and the publisher has enabled them to present it in most attractive form. The anatomy and physiology of the cerebellum are made particularly clear, and the symptoms, prognosis and treatment of abscess of the brain are clearly set forth.

A Successful Method for Correcting Fallen Arches.—C. E. Stephenson (Indianapolis Medical Journal, November, 1916.) states that he takes an impression of the bottom of the foot with a modelling compound, such as is used in dental laboratories. From this impression a plaster cast is made, being trimmed down before hardening to the shape and length desired, according to the location of the trouble in the particular foot being treated; it is necessary for the arch support to be very much longer when the disorder is in the transverse arch. After the cast is sufficiently dry there is built over it the arch support, using for this purpose a hardening cement which is not affected by moisture, perspiration, or heat under 300 degrees. The amount of cement used is governed by the weight of the patient. After going through a curing process extending over several days' time the arch support has the proper flexibility where it is needed, and is very firm where it is desired to have it rigid. The skeleton of the arch support is then covered with thin leather, giving it a neat finish. This leather covered arch support is light in weight, it does not change in shape as do those made of leather and steel, it is comfortable, and can be remodeled by the aid of moist heat to suit the improved foot.

THE FORUM

TO THE EDITOR:

Your very welcome letter and the bunch of JOURNALS arrived yesterday.

Your letter was like a breath of spring from far Arcadia, so full of hope and cheer and fraternal feeling: while the JOURNALS, full of the names and actions of so many of my old friends in Kentucky filled me with pleasure beyond all description, and yet, that pleasure was tinged with sadness when I read that my distinguished friend Dr. C. H. Todd had crossed over the Great Divide and is at rest from his labors.

Another armor bearer has laid his scalpel down,
Another great physician now wears a starry crown.

The JOURNALS were the more appreciated because they contain the first news I have received from the Kentucky medical arena since last summer.

My physician here absolutely forbade me from both writing and reading—claiming that these diversions added to my insomnia which I have learned to be a fact. I am now dictating this letter to you and hope you will find space for it in the JOURNAL, and that will thus, once again, feel that I am in touch with my many friends of our profession in old Kentucky. You know, that when we get homesick, we like to write to our friends, to remind ourselves that we have had them.

My improvement has been such that I am again taking interest in medical matters, and have made many friends here among the physicians and surgeons of Denver. Among these, I take great pleasure in mentioning Drs. J. N. Hall, Robert Levy, Leonard Freeman, O. S. Fowler, John A. McCaw, Edward Jackson, Melville Black, Dr. Meader, the dean of the University; and Drs. Boyd, Lyman, Lave and your old friend, that prince of good fellows and scientific gentleman, Dr. W. W. Grant. And I wish to here interpolate that the medical profession of Denver comprises as a body, one of the cleanest I have ever had the pleasure to meet, and the courtesies they have extended to me have been only limited by my physical inability to "jine with them." I was about to forget the President of the Medical Society, Dr. S. B. Childs, who has also been very courteous to me. Dr. Childs married a Kentucky girl and has therefore, a very warm place in his heart for Kentuckians.

I note what you write in regard to my taking interest here, in matters pertaining to the profession.

I have not attended but one meeting of the Denver, City and County Medical Society, because I have not been physically able to do so;

but this one meeting was very interesting. This was on the evening of January thirteenth, when a very interesting address was given by Dr. Chas. A. Powers on the subject of his experience at the American Ambulance Hospital at Neuilly, a suburb of Paris. The new hall of the society was filled. Dr. Powers told of the remarkable work in which he had taken part, namely, the surgery of severe shell injuries among the soldiers who had been at the western battle front, and especially the plastic surgery rendered necessary by the large number of severe injuries to the face. The unfailing cheerfulness and buoyancy of the French soldier were spoken of in high terms. A number of interesting lantern slides were thrown upon the screen, illustrating scenes, and also showing remarkable results of the work.

The work of Dr. Carrel, and the results of the use of the Carrel solution was spoken of as being the most remarkable of the many interesting features of the great conflict.

The large attendance at this meeting gives me pleasure to once more revert to the Medical Profession here as a whole. While there are some who are suffering from exophoria from trying to keep tap upon their fellows, the great majority seem to be broad-minded, liberal and fraternal in their professional dealings with each other. Of course, I have noticed many funny things, just as I used to see among the profession in Kentucky. We have a great many advertisers here who are not countenanced by the better and more intelligent members of the profession. The *Colorado Medicine* is an up-to-date journal, and every issue I have seen is replete with good things.

This brings me back once more to the copies of the KENTUCKY MEDICAL JOURNAL you so kindly mailed me. They all came in a bunch, and you may take it from Graham that they are a treat. Of course, I read all about the Hopkinsville meeting; Dr. Steven's eloquent Oration in Medicine; Dr. Gambill in Surgery; Curran Pope's Lincoln was just as Popenesque as ever: Glahn on Poliomyelitis showed great scientific research and on through the November number, just devouring the good things and living with them, even unto the Society reports, when I came to the report from Wayne County, where the secretary writes: "A privy for graded schools was discussed, Dr. McCormack was so full of this subject—that it took some tact to draw him away, etc." Now, Dr. Arthur, I am truly glad and I know that your many friends will rejoice with me in the thought that the privy was sanitary. I think I have it on you, and I wish I could hear Richmond or McClure laugh. Well, 'tis a line o'type or two that goes to make the joy of living, eh!

After reading so many good things, it was

with a feeling of sadness and a sensation of being smirched in the dark that I read what my esteemed fellow townsman, Dr. J. W. Stone said about his home county of Henderson. As the Secretary said later on in his remarks, in regard to a doctor talking too much, "You can take it for granted that he is talking about himself;" for Dr. Stone has been a member of the Henderson County Medical Society for many, many years—one of those he mentions as "paying dues." In fact, Dr. Stone has been *particeps criminis* in the shortcomings of Henderson county; but he belongs to the type of individuals spoken of in Oliver Twist as "never seeing but one side of a question at a time and that is the side which first presents itself." Even admitting a portion of his remarks as true, they would have been better left unsaid. Am reminded in this connection of a rebuke once given by my esteemed fellow, the scholarly Arch Dixon, to one of his kinsman, at a meeting of the Ohio Valley Medical Association who persisted in alluding to local troubles: Said he, "it would be far better to wash your soiled linen at home." Dr. Stone could have well said at the close of his tirade, and Gentlemen, "*Peccavi!*"

The fault, my dear Secretary, "is in ourselves that we are underlings."

This indulging in local laundry work is of no permanent value to an Association, and I would far rather add to the gaiety of nations as Tom Underwood does, or to the woof and warp of human happiness as you and my dear friend Dr. Richmond, than to impale my fellow upon the sword of criticism.

I hope this will find you, your father and all well, and that you will see your hopes of a bright future for Kentucky medicine fully realized. I am,

Faternally,

CYRUS GRAHAM.

TO THE EDITOR:

I did not have the pleasure of attending the Hopkinsville meeting, but to Dr. J. W. Crenshaw's article in the Forum in the December, 1916, number of the JOURNAL, I want to give an extra loud Amen. "So mote it be." If the doctors of Kentucky in their annual meetings expect the people of the State to look to them for advice and follow their instructions they certainly ought to set an example for the people of the State that is worthy of imitation. I hope those "crack shots" that could not hit the cuspidors at Hopkinsville will take Dr. Crenshaw's advice when they go to Ashland, not only on tobacco but every other appearance of evil, and that no doctor of this State will be where some one will say, I smelt whiskey (or any other intoxicating liquor) on that doctor's breath, and after the Ashland meeting I trust that the citizens of Ashland can

truthfully say they were a fine lot of doctors and can also say that a better lot of gentlemen never met together in our city. Doctors of Kentucky, be upright and an honor to our profession.

Submitted with the hope that the advice will be heeded.

Respectfully,
J. F. JONES.

TO THE EDITOR:

In the last issue of the JOURNAL considerable space was devoted to the graduate nurse giving anesthetics and in conclusion of same you have invited an expression of the members on the question.

Nursing is a separate and distinct profession from that of medicine and surgery although closely allied. From the very nature of the training the nurse receives she can not in any sense be considered a doctor nor should she be expected to perform duties which rightfully devolve upon the doctor.

It is a fact that in many of our large surgical centers some of the prominent operators have seen fit to avail themselves of the services of the professional nurse as anesthetists, this they have done for various reasons, one of which as you have intimated in your editorial may be mercenary, be this as it may, doctors, I do not believe have the right to do as so many things enter into the make-up of a competent anesthetist, such as being able to judge properly the condition of the heart, lungs, kidneys, etc., which the nurse cannot do as the course prescribed in anesthesia for nurses does not in any way qualify them to make a competent physical examination of the patient. There is no doubt that nurses employed solely to give anesthetics can and do acquire a certain degree of skill in their administration and further the claim is made that they are safer than the average doctor, which must also be conceded, but the fact should not be lost sight of that in this day and time when so many competent men are graduated each year that it is very unlikely that even in the sparsely settled districts, to say nothing of the cities and towns, some doctor can be found who is safe and just as skillful with anesthetics and it is he and not the nurse who from the viewpoint of safety to the patient and the logical aspect of the question should be employed.

The chiropractic, the osteopath and the professional masseur might well expect to administer anesthetics if the nurse is permitted to do so as she is no more a qualified doctor than they are, in the eyes of the law. It is urged as an argument in favor of nurses giving anesthetics that they are entrusted to give other medicines, why not anesthetics? This in my opinion does not constitute a valid reason as there is considerably more, as stated above, in the proper administration of an anesthetic than in giving a dose of calomel to a

patient, though both be given by order of the doctor.

The nurses in this State are as good as can be found anywhere and their profession stands on a high plane and it is to be hoped that in the near future no nurse will attempt to perform any duty which the doctor should perform, thereby assuming a responsibility which in many instances, is greater than that of the surgeon and of which I believe she has neither a legal nor a moral right to assume.

In calling for an expression of views as you did, I hope the above will be taken in the spirit in which it is given as it is not the intention of the writer to in any way reflect upon or criticise the nurse's ability as a nurse.

I am respectfully,
A. H. BARKLEY.

TO THE EDITOR:

I write to extend my high appreciation of the great work accomplished by the Kentucky State Board of Health School for Health Officers. Its success has passed my most enthusiastic anticipations, and I enjoyed this last meeting more than any former one and it stands shoulder to shoulder with the Kentucky State Medical Association: in fact, I believe it is at a few inches higher than the latter, and weighs much more. What a joy it is to know the numerous medical schools have passed away in Kentucky and in their stead we have the State and County Boards of Health School for Health Officers and the State Medical Association Louisville University. It seems I live in a new professional world when compared to the state of conditions that formerly existed. Should Dr. Steele Bailey return to Kentucky and be at our Health Officers School he would be as much surprised as Rip Van Winkle was. The achievements you have accomplished are wonderful to behold. I shall enter into my work next year with more vim and ardor than ever before. What will a magic lantern cost; and the State Board of Health loan the use of the slides? How long can a set of slides be kept? I want to visit Stanford, Crab Orchard, Hustonville, Moreland, McKinney, Kingsville, and Waynesburg Graded Schools in this county of Lincoln and set the people on fire with good things for the Board of Health influence. We have lived to see our enemies pass into "innocuous desuetude" and we still live; "rejoice and happy on the way;" but we must not let our "bilers" bust, nor our ship spring a leak.

Your friend,
J. G. CARPENTER.

TO THE EDITOR:

During December the following articles have been accepted by the Council on Pharm-

acy and Chemistry for inclusion with New and Nonofficial Remedies:

Merk and Company: Formin Tablets, 5 gr. and 7 1-2 gr.; Vernol Tablets, 5 gr.

H. K. Mulford Company: Pertussis Bacterin, Mulford.

Schering and Glatz: Iocamfen; Iocamfen ampules.

E. R. Squibb and Sons: Urease, Squibb.

Non-Proprietary Articles: Acetylsalicylic Acid; Neutral Solution of Chlorinated Soda.

A BALLAD OF HEROES.

In Memoriam Doctors Hawkins Brown and J. T. Wesley of Lincoln and Casey Counties, Kentucky, Respectively.

By William Lane Lowder, Tipton, Indiana.

Because you pass'd, and now are not,—
Because, in some far remoter day,
Your sacred dust from doubtful spot
Blown may be, by ruthless winds sway,—
Because you perished—shall men say
Your deeds were naught, and thus profane
Your lives with that cold burden? Nay,
The deeds you wrought were not in vain!

Though, it may be, above the plot
That hid your once imperial clay,
No greener than o'er men forgot
The unregarding grasses sway,—
Though there no sweeter is the lay
From careless bird,—though you remain
Without distinction or decay,—
The deeds you wrought were not in vain!

No. For while yet in castle or in cot
Your story stirs the pulse's play;
And men forget the sordid lot—
The sordid care, of cities gray;
While yet, beset in homlier fray,
They learn from you the lesson plain:
That Life may go, so Honor stay,—
The Deeds you wrought were Not in vain!

Self Communion.

What others have done, should we not try?
No Greatness is seen on Idle Street!
The steep we climb to the mountains high!
By onward moving with tireless feet.
To deprive a soul of its birthright, try,
Is to deny the light of Eternity's day;
No God would earth create, mountains high,
Were living souls not more than they.

L'Envoy.

Heroes of old! I humbly lay
The laurels on your graves again;
Whatever men have done, men may,—
The deeds you wrought were not in vain.

IN MEMORIAM DR. CECIL L. HUDGINS.

In the passing of Dr. Cecil L. Hudgins, whose life and body were dissolved by the will of the Supreme Creator, at his palatial home on Main street, in the early morning of Thursday, September 28th, this section of the State loses one of its best known and most successful physicians; the county of Carter one of its most useful and best professional citizens, and our city, a valuable human asset, whose place, in many respects, will be vacant for many years, if at all ever filled.

Doctor Hudgins was a man of intelligence outside his professional knowledge, and possessed that rare spirit of independency that perfects self-reliance; was a man who recognized a friend always and not at all ceremonious in the recognition.

Doctor Cecil Lowring Hudgins died Sept. 28, 1916, at 7:30 in the morning. He was stricken with heart disease the 26th, at 9:15, in the morning, and never moved a muscle until the 28th at 8:15. He was 59 years, 30 days old. He leaves a widow, Nellie Moore-Hudgins, daughter of F. R. and Belle Moore, and 4 children and 3 grandchildren, to mourn their loss.

The deceased was a constant Christian, a devoted husband, a loving, indulgent father, and had a host of friends; was a leading physician and enjoyed a large practice, and will be greatly missed in this community by all.

He is now basking in that sun bright clime, undimmed by sorrow, unheard-of time; where age has no power over the battle flames; where the eye is fire and the heart is flame, that is seen in that sun bright clime.

UNCLE TIP MOORE.

Treatment of Bladder Tumors.—Bernardino Mariani (Revista de la Asociacion Medica Argentina, August, 1916) considers that the high frequency current is the treatment of election in papillomata of the bladder. In malignant neoplasms extirpation of the tumor is preferable with high frequency applications to the peduncle. In infiltrated neoplasms which cannot be removed by operation these currents suppress hemorrhage and soothe pain, although they do little good in carcinoma or sarcoma. Advantages of the high frequency treatment are that no anesthetic is necessary; the operation is done in sight; there is produced neither pain, reaction, nor hemorrhage; there is no ulceration nor scar; the patient can continue his usual occupation; and the destruction of the tumor can be carefully watched through the cystoscope. Slight disadvantages are the length of time required, the possibility of increasing vesical irritability in cystitis, and the difficulty of the technic in certain locations of the tumor.

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No. 4

EDITORIAL

HAVE YOU PAID YOUR DUES?

We trust this greeting will be read by every owner of the JOURNAL. Unless your dues have been paid for 1917, this is the last issue which will reach you until they are paid. Besides this, no matter how unjust the suit for mal-practice which may be brought against you, the Medico-Legal Committee will not have a right to extend its assistance to you. The law is clear on both of these subjects and the officers of the State Association have no option in the matter. On the tenth day of April, a clerk goes through the addressograph list of the JOURNAL and removes the name of every member whose dues have not been received. Under these circumstances, will you not hand or mail your dues to your county secretary to-day?

The Kentucky State Medical Association is doing better work in most counties than it has ever done. If it is not in your county, will you not take a little of the blame yourself and help your officers make a good county society there? Incidentally, the dues are going to have to be raised next year in order to pay for the increased JOURNAL we are printing, owing to the greatly increased cost of raw material, especially paper, unless our members patronize our advertisers better. We do not mean by this that we are asking our members to buy advertised wares simply because they are advertised, but we do ask you to give our advertisers a fair chance. If you want any of the things they advertise, write them and give them an opportunity, and, if they can furnish it to you at a better quality and better price, purchase from them. The JOURNAL stands behind our advertisers with its guarantee for their advertised products. For example, when you want instruments, buy them from Tafel or Betz, if they can give you things just as good at a fair price, and do not buy anything from some Cincinnati or St. Louis concern that gives no patronage to the medical profession of Kentucky.

The JOURNAL also needs more first class,

thoughtful articles, particularly case reports. It also needs the minutes of every meeting of every county society. Your county society, by just so much as it fails to send in these minutes every month, is contributing to the failure of the JOURNAL to cover all that is of interest and value to the physicians of Kentucky.

THE NURSE-ANESTHETIST QUESTION.

Under the head of official announcements, we publish two important opinions on the nurse-anesthetist question. The first is from Dr. Arthur Dean Bevan, the Chairman of the Council on Medical Education of the American Medical Association, and one of the most distinguished surgeons in the world, and it is so complete that it will convince all who read.

The second, of even greater importance in Kentucky, is the opinion of the Chancellor of the Jefferson Circuit Court, Judge Kirby, in the agreed suit brought by Dr. Louis Frank and his nurse-anesthetist, Miss Hatfield against the State Board of Health, to construe the law of Kentucky on the subject. The opinion is a far-reaching one, and, while it was expected by those who are acquainted with the trend of the opinion of the courts, it is most gratifying. To a larger degree than in any other State, our medical profession of Kentucky is contributing its services to the public. A third of the people of the State never paid a cent to a doctor in their lives, and, yet, in the moment of their birth, and from then until their eyes are closed in death, they have received the same kind, constant supervision as their neighbors who can and do pay for these services. This contribution of service by the medical profession of Kentucky, is paralleled by no other, except the ministry. It is eminently proper, therefore, that public opinion, as voiced by the bench, should uphold the proper contentions of the medical profession for the protection of its portals from the unqualified. It is important for the critics of the State Board of Health, both within and without the profession, to remember that it is ready and willing to li-

cense to practice in this State any qualified person, who is and has been honorable and upright, to practice any branch or any system of medicine whether it is deemed regular or irregular, provided the applicant can pass the examination and thus prove his qualifications, as provided by the Statute. The State Board of Health was not created to protect the medical profession nor any part of it from competent competition. It was created for the purpose of protecting the health and lives of our people. This duty it has performed since its creation without fear or favor; that its efforts have been successful to a degree not attained in any other State is shown by the fact that there is not an advertising quack doctor in Kentucky, and this statement can be made of no other state in the Union.

To continue to succeed in preventing the encroachments on the practice of medicine which are of the highest danger to sick people, and, therefore, to the welfare of the Commonwealth, the State Board of Health must have the support not only of the profession and the people, but we must insist that the physicians, themselves owe it to the profession to see that no "cheap-John" ideas shall tempt them to the use of unqualified assistants in any department of medicine. Call in your neighboring physician if you need help! There is no doctor who does not disgrace his profession when he intimates that he can not get competent assistance for any case, however poor, for the asking. Call for consultation more frequently! Meet your fellow physicians in the county society more frequently, but show you are competent yourself, and that you are doing work that is creditable to the profession and safe to the people. If every physician in Kentucky upholds the high standard which our State Board of Health proposes to maintain, there will be no difficulty in procuring from all the courts and from all the people favorable decisions on all those things in which we and they have a common interest.

THE NATIONAL TUBERCULOSIS CONFERENCE.

The National Tuberculosis Conference meets in Cincinnati on May 9th, 10th and 11th. It is seldom that Kentucky physicians have the opportunity of attending meetings of such prominence and importance which is being held so near their homes. At this Conference there will be heard discussions of this vital subject by men of national prominence, superintendents of sanatoria, superintendents of industrial corporations interested in tuberculosis prevention work, secretaries of state organizations, boards of health, supervising superintendents of nurses, and, in fact, this meeting will afford Kentucky doctors and the

friends of antituberculosis work the opportunity of hearing the very latest to be said in the handling of this problem, and will be able to view the very best exhibits which are possible to assemble for the teaching of this subject to our people.

Please begin to make your arrangements now to attend one or more days of this Conference. Make your hotel reservations promptly, as doubtless accommodations will be hard to secure a little later on account of the tremendous crowd that will be attracted for this event. For particulars and programs, write to Dr. W. L. Heizer, Secretary, Tuberculosis Commission, Frankfort.

WELCOME HOME!

You who have so ably represented the medical profession of Kentucky, in the service of our country at the Border are trebly welcome home. We who stayed here and prospered in our practice in your absence appreciate the sacrifice you made in time and money. We realize that you had extended opportunity and that you come back to us with increased ability and prestige. We are glad you are at home, not only because you are worthy citizens, but, especially, because you have done your duty in a way that befits our profession. We shall try to make your re-entrance into practicing a little easier. We are expecting a little more from each of you in return for this, and will, therefore, call you in consultation a little oftener.

Thrice welcome back to the old Kentucky Home which you have honored, and which honors you!

DR. J. S. LOCK.

It is with mingled feelings of regret and congratulation that the JOURNAL records Dr. Lock's resignation as a Sanitary Inspector for the State Board of Health, and his return to the general practice of medicine at Barbourville.

Dr. Lock is a splendidly qualified physician. He is as gentle and kind as any woman, and, yet, has as much determination and courage as any man. He is a born leader of the people. This is because he loved them for their own sake. Dr. Lock has treated and cured more cases of hookworm disease than any other one physician in the world. He has done this because he loved, what Lincoln called the poor people. He loved them so well, that he could lead and teach them to do the things that he knew they ought to do to be well. It is within the mark to say, that there are thousands of healthy young men and women in Kentucky who are self-supporting, who would have been worthless and useless from disease, had it not been for his devoted labors. No one has better

understood the limitations which were placed upon these labors than Dr. Lock. Without adequate funds, he knew it was impossible to do the rehabilitation of individuals and families that was essential to the completion of the work he so well started. When every county in Kentucky will have an all-time health officer, and every county will have an all-time health officer before many years, but few will have contributed as much to that greatly desired result as Dr. Lock.

We congratulate his friends both in the profession and amongst the people of Knox county, upon his return to practice. It is always a pity for so good a physician to be taken from the bedside of the sick. It is with pleasure and pride that we see such a devoted physician return to the realm where he is most beloved, and from which he receives the most gratitude and love.

Dr. Lock deserves all the good things his professional brethren and his people can do to make his lot a happy and successful one.

UROLOGY.

We desire to congratulate the profession upon the appearance of Volume 1, Number One of the *Journal of Urology*. The mere fact that Dr. Hugh H. Young, of Baltimore, is its Editor-in-Chief, is sufficient warrant of the value of its contents. The initial number is one of the best we have ever seen, and we will look forward to its appearance every second month with interest.

The *JOURNAL* congratulates Dr. Young upon the high character and technical skill with which the first number is presented, and we trust he will receive the support from the profession which such a *Journal* deserves.

THE RURAL LIFE CONFERENCE.

Possibly the most important meeting ever held in Kentucky, was the Rural Life Conference, which convened at the Western Kentucky Normal School, in Bowling Green, in February.

Its originator and presiding genius, was President H. H. Cherry. Mr. Cherry is, in the opinion of most thoughtful Kentuckians who know him, or are familiar with his work, the greatest constructive statesman we have. Sprung from the soil, himself, with a thoughtful, analytical mind, he has made a careful survey of all those conditions which affect the present and future welfare of the people of the Commonwealth; and, though thoroughly familiar with its complicated problems, he looks that future in the face with undaunted courage and a grim determination to settle them right, both for us and our children's children. President Cherry's solution may be summed up in two lines of activity: education

and cooperation. He believes education should be reformed only so far as may be necessary to make it available in a practical form for every man, woman and child who would serve Kentucky. He believes every individual born into the Commonwealth should be so trained during his developmental period, that he or she can do some one thing well that is a practical advantage to the whole State. While this special training is being given, our educational system should also give that individual sufficient culture to enable him to appreciate his opportunity and responsibility as a citizen. But, beyond and above all this, he must be trained that he is part of an economic whole, and that it is essential for success that he not only do his part well, but that he do it with a perfect understanding and regard for all those other parts, each of which are essential to success in the great undertaking—the management of a Commonwealth for the common weal.

In all the Kentucky of the past, the church, the school, the farm, the physician, the lawyer, the specialist in whatever other line has worked more or less for the development of his department, but has too frequently been forgetful that progress in one department alone does but little, if all the others do not keep pace with it.

We trust every physician in Kentucky will familiarize himself with the reports of this Conference when they are finally put in print. We are sure that they will not only be stimulated to thoughtful consideration, of the important principles involved, but that they will be thoroughly glad to put their shoulders to the wheel and use a little of their brawn or brain in helping to speed the "get-together" movement under the wise generalship of President Cherry, and all those forward looking Kentuckians who are determined that our beloved State shall avoid the pitfalls and dangers that have already overtaken so many states in the past.

FIFTEEN THOUSAND MOTHERS DIE IN THE UNITED STATES.

Dr. Grace L. Meigs has just issued a bulletin of the Children's Bureau, of the U. S. Department of Labor, on maternal mortality, in which she states that 15,000 maternal deaths occur annually in the United States from conditions incident to maternity, and that almost all of these deaths are preventable.

How can this be accomplished? It is first necessary to know the causes of the present conditions:

First. The hazards have been either ignored or accepted as unavoidable. "Knowledge of the need for good care at childbirth is essential; the lack of such knowledge and of a de-

mand for this care has been, probably the chief factor in producing the present indifference to this phase of preventive medicine. Communities are still to a great extent indifferent to or ignorant of the number of lives of women lost yearly from childbirth."

"The second fundamental cause—the difficulty of obtaining adequate care—is seen to depend to a large extent on the first. As women, their husbands, physicians, and communities realize the absolute need of skilled care, methods for providing it will be developed."

In the bulletin, the city problem and the rural problem are both discussed. Dr. Meigs expresses much surprise at the well-known fact, that, even in a city well supplied with clinics and hospitals, the number of women saved by them is small in comparison with those who bear their children without receiving adequate care. Large sections of the population of every city depend on ignorant midwives. It is emphasized, however, that women of moderate means, who can not pay large fees, and, yet, who are too well off to visit clinics are the last to receive benefit from improvements, from the adoption of better methods. Dr. Meigs well suggests that the rural nursing service, centering at the county seat, the nurses being especially trained and giving special attention to recognize danger symptoms in prospective mothers, so they can call in qualified physicians at the slightest sign of trouble. It is well, also, to have the county society arrange for a maternity clinic where these matters may be discussed with young mothers, and, above all things, arrangements must be made so that skilled attendants will be obtainable for each mother in every county.

This splendid bulletin can be secured by writing to your Congressman, or Senator, at Washington, and it is worthy of the attention, not only of every physician, but of every lover of his kind.

Hypnotic Suggestion in Military Cases.—J. Bennett Tomblason (*Lancet*, October 21, 1916) states that as the result of an experience of eighty cases of various forms of nervous and mental disturbances due to war conditions he has found hypnotic suggestion a most valuable therapeutic measure, especially if employed within a reasonable time of the development of the affection. The greatest degree of success was secured in shock psychasthenia and neurasthenia, and very good results in hyperthyroidism. Practically all patients of the first two types of disorder were cured and returned to duty or to work, and the cures were permanent. In most instances it was necessary to induce the state of somnambulism for the best results.

SCIENTIFIC EDITORIALS.

CHRONIC SYPHILITIC AORTITIS.

Protean is an adjective that was often coupled with syphilis by the clinicians of the past in an effort to describe the numerous manifestations of syphilis with which they were familiar. For they recognized the fact that syphilis might appear in any one of innumerable forms in nearly any part of the body. Yet, although they thought that they were giving syphilis all the credit due it, still they did not realize how often syphilis struck at the internal organs nor how many organs were frequent sufferers from such blows. Only in the past few years has the extensive recent investigations begun to bear fruit in statistics on the incidence of certain pathological conditions, and the frequency of a luetic causation of such conditions. Syphilis of the heart, aorta, stomach, intestines, liver, pancreas, spleen, kidneys, lungs—these have all been studied. Now reports are beginning to come in of syphilitic infection of the thyroid, suprarenals, trachea, etc.

One of the most interesting of these to the physician from the clinical standpoint is the aorta. Aortitis may have so pronounced an affect upon the patient's health and is so serious a menace that it necessarily must arouse considerable interest when we find how often this condition is found at autopsy. Moreover, an aortitis of luetic origin which is still active yields to non-specific treatment, making it still more important that we should know what percentage of cases of aortitis are due to syphilis. Further, we should have an idea how often to expect to find symptoms of aortic involvement among syphilitics, so that we may be on our guard against such a complication and treat it early in an attempt to prevent any permanent damage.

The investigation of aortitis has been largely carried on in the autopsy room. This is one of the conditions in which valid statistics can be acquired only by the careful examination of the aortas from hundreds of dead bodies. Germany and France lead in the matter of giving the investigator the utmost freedom in employing the bodies of the dead in research work. It is not surprising, therefore, to find that the French and German syphilographers have been foremost in the study of syphilis of the internal organs. Among these workers one hears most of Gaucher, Deneke, Oberndoefer, Demmin, Lippmann, Camille-Briscout, Pierret and Dupot.

Although most of the investigators attribute a great many of the cases of aortitis to other etiological factors, Gaucher and Breinhold that chronic aortitis is always due to acquired syphilis. They also state that the ma-

jority of cases show the involvement between the ages of 40 and 50, while in one third of their cases it did not appear until after the age of 50. They, with others, are authority for the statement that syphilitic aortitis appears much oftener in men than in women, in which they are upheld by many others. They attribute the greater incidence in man to the lowered resistance of the aorta in users of tobacco and alcohol.

The earlier clinical manifestations of this condition are a dysphonia, a rapid excited heart-beat, sense of weight in the chest, pain over the cardiac region and general lassitude and lack of strength. As the pathological invasion grows these symptoms become more pronounced; they are seldom absent in a fully developed case. Under certain conditions the aortic valves may become widened and distorted, causing an aortic regurgitation, which may lead in turn to a mitral insufficiency. All cases of aortic and mitral insufficiency should therefore come under the suspicion of being luetic in origin. When in doubt a Wassermann test should be made.

The differential diagnosis between a syphilitic aortitis, an arterio-sclerotic aortitis and dilation of the aorta due to an endocarditis, still require a careful and minute history of the case, habits of life, diet, previous illnesses, former places of residence, etc., etc. A Wassermann test of the blood may be enlightening. In over 1,000 cases gathered by Deneke, Oberndoefer, Friedlander, Demmin, Lippmann, Nonne, Gaucher and Sterziz the Wassermann was positive in 86.6 per cent.

It has been stated that the color of the skin may furnish an important point on which to base a differential diagnosis. According to this the skin of syphilitic aortitis patients has a peculiar pallor, with a yellow or dark-brown tint, while the skin of those who suffer from arteriosclerosis or rheumatic endocarditis has rather a florid color.

Syphilis of the aorta causes the changes characteristic of syphilitic infection of other organs. Not only the aorta is affected, but also the smaller vessels very often suffer. The presence of an aneurysm should always cause suspicion of lues. The pathological changes in the aorta is complicated by the strain to which its walls are subjected by the blood. Sometimes characteristic gummata are formed in the aortic wall, but usually there is a more diffuse inflammation around the spirochetal invaders. These can be found in the tissue if careful search is made for them at an early stage, but later on they may have entirely disappeared, leaving however a damaged aorta behind. The greatest damage is usually done in the aorta descendens, being localized in this part of the aorta. While the adventitia is most affected there is nearly always

some involvement of the media, extending sometimes into the intima. There is the usual round-cell and plasma cell infiltration around the small blood vessels of the aortic wall, interspersed with giant-cells, while at the periphery of the inflammatory area there is to be found a belt or walling in zone of plasma cells. It is the abundance of the typical plasma cells, occurrence of giant cells and relationship of infiltration to the vasa vasorum which enables one to make the diagnosis of syphilitic infection.

The aorta, once involved, is apt to be permanently damaged, so that it is unable to stand the strain to which it may be put, or it may be reinfected again and again with the spirochetes as long as they are in the body. A complete cure is a difficult thing to achieve. The treatment should be of the underlying syphilis on the one hand and of the aorta as a part of the circulatory system on the other. Mercury and iodides should be used for the luetic infection. Some authorities believe that Salvarsan intravenously is too dangerous here; some are equally opposed to injections of mercurials intravenously. Sodium iodides and mercury biniodides are recommended in the solution known as Ricord's mixture. Whatever specific treatment preferred it should be followed as long as one believes spirochetes are present. Equally important is the symptomatic treatment. Rest in bed comes first; the diet should be nourishing, but not too rich in meat extractives. The blood pressure should be kept down, although rest and freedom from worry and emotion will usually suffice for this. Afterwards carefully graded exercises, avoidance of strain and excitement, plenty of sleep,—even after the patient has returned to work he should try to keep up these measures since he is always in danger of a recurrence of the trouble.

M. L. RAVITCH AND S. A. STEINBERG.

“HEAD COLDS.”

Louisville and its vicinity has just passed through its annual season of bad weather and consequent infectious diseases of the upper respiratory tract. It would seem that each year, this season of inclement weather is marked by the preponderance of some one form of infection. One year we see middle ear abscesses in abundance, while in the next year the pharynx—the larynx or trachea may be the organ mostly involved or as it has been this year the nasal accessory sinuses may be the seat of infection.

The past six or eight weeks have been especially marked by an unusual number of cases of empyema of the nasal accessory sinuses.

The lay people have been in the habit of referring to the mild cases of this kind as "head colds" and to the more severe ones as "grippe." While it is an established fact that the infection of the nasal mucous membrane by the influenza bacillus is associated with involvement of the accessory sinuses in a high percentage of cases, it is equally true that most of the cases spoken of as grippe synonymously with influenza, are not cases of influenza but acute empyema of the nasal accessory cavities, due to other forms of infection. Many of the cases begin with an acute coryza or with what people term "head colds," characterized by sneezing and burning in the nose, watery discharge and obstructive swelling in the nasal passages. Others begin with a dryness, burning and finally pain in the nasopharynx, while some associate the beginning of their trouble with an acute tonsillitis or pharyngitis.

The first indication of sinus involvement is usually a feeling of oppression and heaviness over the affected cavity or cavities and a scant watery or mucoid nasal discharge which usually remains unnoticed. The discomfort is finally superseded by pain over the region of the sinuses, at times very severe and radiating towards the vertex and temples, marked headache, usually some heaviness of the eyelids, some photophobia and lachrymation, increased headache, loss of appetite and general depression. The tongue is coated, the breath foul and there is a rise in temperature of from 1-2 to 1 1-2 degrees. The sense of smell is usually disturbed and frequently lost.

The nasal discharge rapidly assumes a purulent character, streaked in the beginning with blood and becomes so profuse that the patients use from 6 to 10 handkerchiefs a day. Smears of the secretion as well as corroborative cultures, in the cases of the writer, almost without exception contained the streptococcus catarrhalis with or without the staphylococcus, some few of the pneumococcus and none of the influenza bacillus. This would lead to the conclusion that most of the acute sinus infections or so-called grippe are the result of a streptococcal infection.

While the process may limit itself to one or several of the sinuses, it was the writer's experience that during this recent epidemic all of the sinuses were involved in most of the cases.

The diagnosis of the acute sinus cases is usually easily made by the presence of the pus in the nasal meati, the coincident turgescence of the mucous membrane of the turbinates, the neuralgic pains and the tenderness on pressure over the affected cavities; and when necessary can be corroborated by transillumination and X-ray examinations.

With but few exceptions the acute sinus in-

fections terminate in resolution in from 10 to 25 days. A few leave one or more of the sinuses with a chronic discharge and exceptionally the cases terminate fatally through intracranial infection as it was the writer's misfortune to observe one. Although acute sinus empyema is usually self-limited much can be done to add to the comfort of the patient.

Early in the disease small doses of aconite followed by phenacetin or aspirine, with atropia if nasal secretion is excessive, add to the comfort of the patient. If the pain is very severe an anodyne combined with the above is permissible.

Hot compresses over the sinuses, steam inhalations with menthol and confinement to the warm room will lend much to the comfort of the patient and will encourage drainage.

Weak solutions of adrenaline 1-10000 used with an atomizer every 6 to 8 hours, to retract the swollen mucus will also aid drainage and open the breathing space.

Cleansing of the nasal passages with a mild alkaline wash used in the atomizer is desirable. Normal salt solution answers the purpose being non-irritating and not unpleasant, hence it can be used frequently. The use of argyrol in 5 to 10 per cent. solution either with a medicine dropper or atomizer seems beneficial.

In the maxillary cases which do not yield well to conservative treatment the irrigation of the cavity through the inferior meatus by means of a curved trocar and cannula is often employed and is nearly always followed by relief of the pain, and consequently has at times to be repeated several times during the course of the attack.

Vaccines administered during the acute stage of sinus disease have met with little success and are not employed much by the rhinologists during this stage.

ADOLPH O. PFINGST.

Simple Aseptic Vaccination.—Echlin S. Molyneux (Brit. Med. Jour, November 4, 1916) states that it is possible to eliminate local infections by the following simple technic for vaccination. The skin is thoroughly disinfected by rubbing with methylated spirit; after breaking off one end from a tube of lymph, the end is sterilized in the flame for a moment, and the lymph driven out on the patient's arm by heating the sealed end of the tube with a match. The needle is next sterilized in the flame, the lymph spread, and the skin scarified through it. A piece of sterile gauze is then closely strapped to the patient's arm by wrapping adhesive plaster several times about the arm and pad. This dressing remains in place for five days, when the vaccination is inspected, and a fresh dry dressing of boric lint is applied. With a little practice the method is simple and rapid so that each vaccination requires less than two minutes.

OFFICIAL ANNOUNCEMENTS

THE NURSE-ANESTHETIST QUESTION.

Chicago, Illinois, Cook County, ss.—Affidavit of Dr. Arthur Dean Bevan of Chicago.

State Board of Health of Kentucky, Dr. A. T. McCormack, Secretary, Bowling Green, Kentucky.—Gentlemen: In view of your efforts in behalf of the public welfare of the people of the Commonwealth of Kentucky, in restricting the administration of anesthesia to licensed physicians and dentists, and in proceeding before the law to prevent the giving of anesthetics by unlicensed and unqualified persons, permit me to submit the following opinion regarding an endorsement of your activity.

For years the world's economists have gradually perfected the legal control of the practice of medicine and dentistry for the protection of the public and to secure definite standards of competence. In a similar manner the medical and dental professions have labored within themselves to perfect the science and practice of medicine and dentistry.

The beneficence of anesthesia is a gift of medicine and dentistry to mankind. Since its discovery it has always been an integral part of these professions. All the advances recorded in anesthesia have been the work of physicians and dentists, and its entire literature has originated from those in these professions, who have given its development their special thought.

Anesthesia has achieved to the standing of a "specialty" in the practice of medicine and dentistry, as witness the Section on Anesthetics of the Royal Society of Medicine, the International Congress of Medicine and the International Congress of Dentistry. In the United States and Canada the specialty is represented by the American, the Interstate, the New York, the Providence, the Louisville and Indianapolis Associations of Anesthetists. These Associations meet with the larger medical and surgical associations to advance the science and practice of anesthesia.

They have recently united in a canvass of the medical and dental schools and teaching hospitals to adapt standard methods of instruction and training in anesthesia in consonance with the progressive, educational policies of the various state boards and the Council of Medical Education.

The organized anesthetists are putting this constructive reform into effect as rapidly as is consistent with permanent success.

The administration of anesthetics should be restricted to licensed and qualified physicians and dentists, as it is a part of the practice of medicine and dentistry and only physicians

and dentists receive proper instruction in its fundamental science and training in its administration. All members of the medical and dental professions, administering anesthetics have conformed to all the education and legal requirements for licensure and interstate reciprocity, in order to assure their certification and competence so that the public may be properly protected.

Anesthesia is not and has never been a part of the duties of nursing. Nurses do not and cannot comply with similar standards and requirements demanded of physicians and dentists administering anesthetics. There is nothing in the registration laws for nurses that confers on them the right of privilege to administer anesthetics. They are not taught the science or practice of anesthesia in their regular course of training and many lack the preliminary education to even understand the subject. They do not submit to an examination in respect to their competence in administering anesthetics before any State medical board.

Anesthesia is a vital, integral and exceedingly dangerous part of the practice of medicine and dentistry. Surgery and its specialties have come to the point where the operative procedure requires the undivided attention of the operator and he cannot supervise the administration of the anesthetic and operate at the same time and do justice to either or the patient. In many operations the immediate and remote danger of the anesthetic exceeds that of the surgical procedure.

It may be urged that the surgeon can supervise the administration of the anesthetic as he supervises the giving of a hypodermic, an enema, a surgical dressing or an injection of salt solution. The comparison, however, does not hold good. While the dosage of the hypodermic, the quantity and ingredients, the character of the dressing and the character of the hypodermoclysis may all be accurately ordered and forecast, on the contrary there is no fixed dosage for anesthetics for different persons, for certain periods of anesthesia and for certain stages of the operation. Moreover, the entire administration of anesthesia must be governed and gauged by the individual reaction of the patient, and in the majority of instances the surgeon is not in a position to determine these reactions.

Surgeons argue that they should be permitted to select their surgical assistance but such a privilege does not give them the right to determine who shall or shall not practice medicine. This is a function delegated by the Legislature of the various states to their state boards, and nurses administering anesthetics do not comply with the educational or legal requirements of these boards for the practice of medicine or dentistry.

If surgeons were permitted to supervise the administration of anesthetics by nurses, there is no logical reason why nurses should not be permitted to operate under the same supervision; and yet the surgeons who are proponents of the unlicensed anesthetists are the first to complain that their rights are encroached upon when trained nurses invade the domain of industrial first-aid and surgery.

The fact that the vast majority of anesthetic deaths occur during the induction of anesthesia and the earlier stages of the operation, shows that the supervision of the operator is a subterfuge and offers no protection to the patient, whose safety is the first consideration of the law.

Modern anesthesia demands not only a knowledge of the fundamentals of this specialty, but also the complete knowledge only acquired from an exhaustive medical or dental course. The licensed and qualified anesthetist must have the capacity of a consultant and be prepared to diagnose conditions that imperil the safe-conduct of anesthesia and be able to condition the patient for the ordeal. He must have a knowledge and command of all anesthetics and methods of administration so that when occasion demands he can change his agents or technic as the reaction of the patient or the demands of the operation require. The nurse-anesthetist is essentially an addict to one anesthetic agent and one method of administration.

If a new era of anesthesia is to be initiated with the nurse as its chief protagonist, all progress in anesthesia will go into the discard. She is being utilized at present solely on account of her economy, and if her use is permitted to become prevalent the licensed and qualified specialist will have to retire from the practice and teaching of anesthesia on account of having his services undersold.

The specialists in anesthesia have contributed time, money, education and training to conform to the requirements of the law and it would be destructive of the entire future of anesthesia not to make all administrators conform to the same standards. In some instances nurses have succeeded to the positions developed in certain clinics by the original efforts of licensed and qualified anesthetists, under the pretext that they were administering the anesthetic under the supervision of the surgeon. It seems surprising that in the first instance a licensed expert should have been found necessary and that later on an unlicensed person could render similar service under the direction of another. This situation is a palpable subterfuge for giving an appearance of legality to a very dangerous and unsafe practice.

It is vital that nothing should interfere with the present education of medical students and internes in the science and practice of

anesthesia, for no matter what part of medicine or dentistry they follow, they will have need of proper instruction and training in the administration of anesthetics. The nurse-anesthetist cannot achieve to the distinction of a faculty appointment, and medical students and internes will not take kindly to being taught by those who know nothing of medicine although they may have had considerable experience.

In restricting the administration of anesthetics to licensed physicians and dentists, the court and board will be acting in consonance with the legislative policy of all foreign governments—policies that have served very remarkably in assuring safety of the public.

The administration of anesthetics by unlicensed and unqualified persons in England is non-existent. The British Medical Association, the General Medical Council, the British Society for the Advancement of Science, the Royal College of Surgeons, the British Dental Association and the Medico-Legal Society have all endorsed legislation to restrict the administration of anesthesia to licensed physicians and dentists, and the consequence has been that the best ether statistics of the United States show three deaths for every one in England.

Germany, Austria and France are equally strict and stringent in their regulations.

As a surgeon and medical educator I have been very especially interested in anesthesia for a number of years. I have always found it possible to secure the services of a licensed and qualified physician for the administration of anesthetics and for teaching my students and internes. In fact, I have had no difficulty in securing rather outstanding research work in anesthesia from my internes under the guidance of the instructor in anesthesia—an outcome that cannot be duplicated in any instance among the nurse-anesthetists.

The solution of the problem involved lies, as far as the trained nurse is concerned, in having the talented nurse, who desires to become an anesthetist, study medicine and become licensed. She may then be properly equipped and standardized to assure the safety of the individual submitting to operation under anesthesia and she will be an asset to herself and the community.

Very respectfully submitted,

(Signed) ARTHUR DEAN BEVAN,

Sworn to and signed before me this 3rd day of February, 1917,

JAMES H. HARPER,

Notary Public, Cook County, Illinois.
(Seal)

JUDGE KIRBY'S DECISION IN NURSE-ANESTHETIST CASE.

Jefferson Circuit Court, Chancery Branch,
Second Division, No. 98893.—

Louis Frank, et al,Plaintiffs
vs. Opinion
John G. South et al,Defendants

This is an agreed case in which the only question asked to be determined is whether or not the administering of anesthetics by a graduate and licensed trained nurse during a surgical operation is practicing medicine within the meaning of the statutes of this State.

The statement of facts show that she is a graduate nurse, whose services are employed exclusively by a local surgeon to assist him in his surgical work by anesthetizing his patients, he guaranteeing her a specific monthly salary to be made up as far as possible by moderate charges against the patients. She does not claim to be a physician and does not prescribe for or otherwise treat patients and her services are rendered in connection with and under the personal direction and supervision of the surgeon, "*in so far as it is possible for him to so direct and supervise her work*, and he directs the kind of anesthetic to be administered." She has had more than six year's experience as a graduate or trained nurse and has made a special study of the administration of anesthetics in surgical cases, having taken a special course in that subject, and she has administered anesthetics in more than twelve hundred surgical cases.

The agreed case furthermore provides as follows:

"Some of the medical associations and organizations of physicians and surgeons in the United States and in many hospitals and reputable physicians throughout the United States, authorize the employment or employ or endorse and approve the employment of graduate or trained nurses to administer anesthetics to patients upon whom surgical operations are to be performed, and the plaintiff in this action may show the usual custom as to the administering of anesthetics by trained nurses by letters, affidavits or other writings from the officers of reputable medical societies, hospitals, or from individual surgeons or physicians, and the defendants may likewise show the custom as to the administering of anesthetics in a like manner.

The usual practice in Kentucky in cases where graduate or trained nurses are in attendance has been for such nurses to administer hypodermics of morphia, atropia, ergot and other drugs when the same were directed

to be given by the physician in charge, in definite doses and at definite intervals, and frequently this is done in the absence of the physician but according to his orders or directions. The administration of anesthetics in surgical cases in Kentucky has been usually performed by physicians, but either party to this controversy may show by letter, affidavit or other writing as to what has been the practice in Kentucky as to others who are not duly qualified and licensed physicians in administering anesthetics.

The usual practice in Kentucky and elsewhere in all surgical cases where a graduate or trained nurse is in attendance is for such nurse to prepare the patients for operation and sterilize the instruments and dressing used in the operation.

It has been the usual practice in Kentucky and elsewhere in cases where a graduate or trained nurse is in attendance for such nurse to administer medicine or drugs prescribed by the physician to the patient."

The defendant State Board of Health does not question the skill or ability of the plaintiff nurse but fears the consequences which it believes will certainly flow from the precedent of allowing her to administer anesthetics in surgical cases without a certificate of proficiency from a lawfully constituted authority. It is admitted that anesthesia to the surgical degree, that is a total unconsciousness from which the greatest physical pain cannot arouse the patient, is fraught with such danger as to require superior skill and ability to successfully meet it. And it is argued by defendant that if one nurse, however competent, be allowed to perform this dangerous service there is nothing to prevent any other nurse, wholly incompetent, from attempting it. The truth of this must be conceded for the question is not whether the nurse in question is competent or incompetent, but whether she may perform the services under the license or certificate given to all graduated or trained nurses. In the exercise of the police power for the protection of the citizens, this and every other State in the Union has legislated upon the right to practice medicine and many, if not all, upon the regulation of graduated or trained nurses, and a solution of the question at bar is to be sought in the statutes of the State. One chapter of the statutes relates to the licensing of physicians and surgeons and another relates to the qualification and licensing of trained nurses, and they must be read together.

Section 2613 provides:

"Authority to practice medicine under this act shall be a certificate from the State Board of Health * * * and said board shall issue a certificate to any reputable physician who desires to practice medicine in this State

who has passed a satisfactory examination before it in the branches of medicine taught in reputable medical colleges. * * *

And section 2615, sub-section 5, is as follows:

"Any other person applying for authority to treat the sick or injured or in any way discharge the duties *usually performed by physicians*, whether by medical, surgical or mechanical means, shall apply to the State Board of Health, who shall examine them as to their competency in such manner as they may deem fair and best, but such examination shall always include anatomy, physiology and pathology, and the term 'practice of medicine' as used in this act shall be construed to be the treatment of any human ailment or infirmity by any method; but this shall not include trained or other nurses, or persons selling proprietary or patent medicines when not traveling as a troupe or troupes composed of two or more persons. But this act shall not apply to the practice of Christian Science."

Turning now to the statute regulating trained nurses it is found that section 3727a provides for the organization of a "State Board of Examiners of Trained Nurses" and their duties. This board is to be composed of five trained nurses "who shall have been graduated for a period of at least five years prior to their appointment from a reputable training school for nurses."

Sub-section 6 regulates the character of examinations of persons desiring certificates as trained nurse and is in part as follows:

"Before any person accept those herein specifically excepted, shall be given a certificate of registration, such person shall be required to undergo an examination of said board touching his or her qualifications as a trained nurse and pass the same to the satisfaction of the majority of said board. The examination to be given such applicants * * * shall be of such character as to determine the fitness of the applicant to practice professional nursing and shall include the following subjects, namely: Practical nursing, surgical nursing, obstetrical nursing, hygiene, contagion, diet cooking, materia medica, anatomy, physiology, gynecology and all other matters deemed necessary and proper by said board to be required of, to establish the fitness and qualification of the applicant."

From the foregoing it will be seen that all who wish to "practice medicine," "treat the sick or injured or in any way discharge the duties *usually performed by physicians*, whether by medical, surgical or mechanical means" shall be examined by the State Board of Health, a board composed of physicians, whereas those desiring certificates of registration as trained nurse must be examined by the

State Board of Examiners of Trained Nurses, a board composed of trained nurses.

The two professions go hand in hand in the great work of relieving the sick and afflicted, but each has its own sphere of action. Ideally the physician of to-day is a scholarly and highly trained man of science, the product of years of study and of observation in the laboratory and the hospitals, and to him is given the treatment of the afflicted by drugs or surgery. The trained nurse is the response to his demand for skillful, intelligent and efficient care of the patient. Without allowance for the difference in intelligence and capacity among individuals it is a matter not to be gainsaid that the physician is superior to the nurse in knowledge and skill in all things pertaining to the treatment and care of the afflicted.

By agreement, the usual method of furnishing proof has been waived and affidavits and statements by letter are allowed to be put in evidence, and it may be well at this point to consider some of the matters thus put in evidence.

The surgeon who employs the plaintiff nurse is one of the leading men in the profession. There are many other distinguished surgeons in the city but he is the only one who employs a trained nurse to administer anesthetics in surgical cases. the others all employing the services of duly licensed physicians or surgeons. This surgeon is not alone in the employment of nurses for such work, however, when the country at large is considered, for in many other cities are to be found a number of eminent surgeons who also employ nurses in their work, and who say that after having tried both the physician or professional anesthetist and the nurse, they much prefer the latter, when qualified. Among the fifty or more surgeons cited by the plaintiffs are Dr. John B. Murphy, of Chicago, W. J. Mayo and C. H. Mayo, of Rochester, Minn., George W. Crile, Cleveland, Ohio, Hugh M. Young, Baltimore, Md., men of international reputation

Dr. Frank says in his affidavit "that the late Dr John B. Murphy, one of the foremost surgeons of the world, stated in his Year Book on General Surgery, issued in 1916:

"A nurse properly trained can be just as competent an anesthetist as a medical graduate properly trained; either not properly trained is dangerous, the latter more so than the former, for he has courage without experience. a most dangerous combination in the operating room."

This is truth and common sense and should be kept in mind in the determination of the question.

Dr. Frank also says:

"The chief reasons trained nurses have not

heretofore been more frequently employed in surgical cases in Kentucky to administer anesthetics are as follows: First, because the education and training of nurses for this work is of comparatively recent origin and the practice has not yet fully taken hold in this state; second, and principally, because of the active opposition of the society of anesthetists, composed mainly of young doctors who administer anesthetics and who do not desire others to engage in the work."

He further says that the principal advancements in anesthesia have been made in the last eight or ten years and "the result has been that the administration by any person who is at all careful and who will follow certain prescribed rules is, as stated, practically free from danger."

Turning to the proof for the defendants we have the affidavit of Dr. A. T. McCormack, a member of the defendant State Board of Health, and one who has had a large experience in surgical matters. Among other things he says he has administered the anesthesia for about 1500 surgical operations and has performed approximately 3,000 surgical operations in which surgical anesthesia has been induced. He says:

"It is utterly impossible for the surgeon while performing a surgical operation to personally direct and supervise the administration of an anesthetic with safety to the patient. It is frequently necessary to change from one anesthetic to another during an operation, or to administer powerful stimulants. It is idle to claim that a surgeon with his whole mind and attention riveted on the necessarily important duties of the operation, can at the same time tell that too much or too little of the powerful drug, being inhaled, is being given to the particular patient. To the surgeon, such a claim is spacious wherever the locus of the particular operation, but any man will recognize its absurdity when the surgeon is operating about the rectum or vagina when he cannot even see the anesthetist or the patient's head. He may direct the particular kind of anesthetic in a given case, but there is no test or method so far devised that permits the most experienced to say that some emergency will not arise rendering the anesthetic agent ordered before hand neither safe nor effective throughout the operation, and the surgeon could only actually supervise such a condition at the greatest risk of delay and danger to the unconscious patient.

That the General Assembly of 1914 established a Board of Examiners of Trained Nurses (Chapter 91a, Kentucky Statutes) and in section 6 thereof specified the character of such examination and the subjects to be embraced therein, and that anesthesia is not included therein: and he is further advis-

ed that questions in regard to surgical anesthesia have never been asked at such examinations, and that he is familiar with the usages and customs of trained nurses in Kentucky, and they do not administer surgical anesthesia except in emergencies in any county in Kentucky and surgical anesthesia is not considered by the trained nurses of Kentucky as a branch of their profession."

The affidavit of Dr. L. S. McMurtry, of this city, a surgeon of 40 years experience, shows that of his own knowledge the custom of surgeons has been for the anesthetic to be administered for surgical operations by a duly authorized physician, except in cases of emergency, and that it has not been customary to permit the administering of the anesthetic by a trained nurse, or by any other person not duly authorized under the laws of the Commonwealth of Kentucky to engage in the practice of medicine. The affiant further states that:

"Whenever a major surgical operation is to be performed, it is usually customary for such duly licensed physicians to begin to administer the anesthetic to the patient in a room adjacent to the operating room and not in the operating room, and not in the presence of the surgeon who is to perform the operation, and while the surgeon is engaged in his preparations for the operation, or engaged in some other operation, and while the patient is under the attention of the surgeon and being operated upon, the attention of the surgeon is naturally concentrated upon the operation itself to such an extent as to make it impossible for him to supervise the administration of the anesthetic and to such an extent as to leave the surgeon and patient, as far as the continuance of the administration of the anesthetic is concerned almost entirely in the care of the anesthetist."

A great number of physicians and surgeons from over the entire country have been quoted by the defendants, among them being Dr. H. M. Sherman, of San Francisco. He says:

"Anesthesia is the suspension of consciousness by drug paralysis of the cord and brain. The abeyance of such tremendously important functions as those of the central nervous system should be in the hands of a physician or surgeon. No surgeon can watch the anesthetist and do good surgery. If he attempts this one phase of his work is sure to be below the standard."

Dr. McRae, of Atlanta, Georgia, is quoted as saying:

"I consider anesthesia one of the most important specialties in medicine."

Dr. Wetherill, of Denver, Colorado, says:

"Generally speaking, I believe that all anesthetics should be given by physicians who specialize in anesthesia. Various anesthetics

chloroform, ether, somnoform, nitrous oxid gas, call for great skill in their administration and except in very rare cases should be administered only by one who is thoroughly familiar with them."

An examination of the record will show there is some conflict of opinion, but there are no two opinions as to the need of intelligent training on the part of the one who is to administer the anesthetic.

Here in the city, it is shown that Dr. McMurry, who has been above quoted, Drs. Abell, Wathen, Cheatham, Grant, Dabney, Willmoth, Hall, Schachner, Allen, Bruce, Koontz, Coomes, Leachman and Sherrill, all able surgeons, do not employ the services of a nurse in major surgical operations but have always employed professional anesthetists. The proof is that all over the country physicians in the larger cities specialize in the administration of anesthetics, but in this city and a number of other cities they have societies of specialists in this feature of medicine.

There can be no question that a woman can perform the service as well and probably better than a man, provided always that she has had the proper instruction. The fact that Miss Hatfield and Dr. Frank deemed it necessary for her to take a special course in the administration of anesthetics goes to show that it is not a necessary function of a nurse, and it is shown in the records that the examination of trained nurses does not include the examination of her qualifications as an anesthetist, but that it is a part of the education and training of a physician and surgeon. Dr. Frank himself admits that the employment of a trained nurse for such purposes is not a general practice in this State, and from the proof it would seem that the administration of anesthetics in surgical cases is distinctly the function of a doctor or physician and not of a trained nurse.

The Court has been cited to many authorities defining the expression, "Practice of Medicine," and it may be said that the services rendered by Miss Hatfield do not come within the definition given by a number of Courts. The definition epitomized is "One who practices the art of healing diseases and of preserving health; a prescriber of remedies for sickness and disease; specifically a person licensed by some competent authority, such as a medical college, to treat diseases and prescribe remedies for them." This is the definition given by the Century Dictionary. But Miss Hatfield does perform the service which is usually and customarily performed by a physician.

Section 2615, sub-section 5 of the State provides:

"Any other person applying for authority to treat the sick or injured or in any way dis-

charge the duties usually performed by physicians, whether by medical, surgical or mechanical means, shall apply to the State Board of Health, who shall examine them."

A number of authorities have been cited which have very little bearing upon the case at bar. The nearest one is the Massachusetts case of *Commonwealth vs. Porn*, 82 N. E. 31. In that case a woman held herself out as a midwife and had practiced midwifery, but did not claim to be a general practitioner of medicine, nor was she licensed to practice medicine under the laws of the State of Massachusetts. She practiced her profession and in doing so used six printed formulas in treating her patients. She was a trained nurse of experience and was a graduate of the Chicago Midwife Institute from which she received a diploma, which stated that she had received theoretical and practical instruction in the art of midwifery for a period of six months and was declared a graduate midwife. She was convicted of practicing medicine without complying with the law. The court said:

"Both medical and popular lexicographers define midwife as a female obstetrician, and midwifery as the practice of obstetrics. *Rov. Laws, c. 76* mentions obstetrics as one of the subjects of examination for the purpose of testing an applicant's fitness 'to practice medicine.' This goes far toward showing that obstetrics is a branch of the practice of medicine. It requires no discussion to demonstrate that, when, in addition to ordinary assistance in normal cases of childbirth there is the occasional use of obstetrical instruments and a habit of prescribing for the conditions described in the printed formulas which defendant carried, such a course of conduct constitutes a practice of medicine in one of its branches, although childbirth is not a disease but a normal function of women, yet the practice of medicine does not appertain exclusively to disease and obstetrics as a matter of common knowledge has long been treated as a highly important branch of the science of medicine."

It seems that the statute of Massachusetts did not separate the work of a midwife from that of a practitioner of medicine.

This case is one tending to show that when the services rendered are those which physicians usually regard as "an important branch of the science of medicine" it can only be performed by one qualified as a physician. The trained nurse in this case is performing the function of a physician, and in the language of the statute is discharging "the duties usually performed by a physician."

There can be no question of the good faith of the physician who employs Miss Hatfield to aid him in his surgical operations. There can be no question of the ability and efficiency of

the plaintiff, Miss Hatfield, to perform the duty but, as contended by the defendant if she be allowed to perform these services without having complied with the law, any other trained nurse who has not her skill or ability or training or other qualifications, and however ignorant, may perform similar services. It is the example which the State Board of Health is objecting to. Miss Hatfield can, and should, submit herself for examination by the State Board of Health and qualify to perform the services for which she is employed.

Dr. Frank and other physicians employing trained nurses say that in so doing they assume the responsibility. Where the trained nurse is known to them to be competent they may take the responsibility, but it is a responsibility, the extent of which they probably have not duly considered. In a suit growing out of the death of a patient where the surgeon had voluntarily employed an anesthetist who was not licensed, he would, in the event of his brother physicians testifying as in this case certainly be held responsible. But even without such testimony the *prima facie* case would be against him.

This is a police regulation designed for the protection of society, and in all such matters the right of the individual must be laid aside for the safeguarding of the public.

The Court finds in favor of the defendants and an order to that effect will be entered.

SAMUEL B. KIRBY, Judge.

March 10th, 1917.

A New Alcohol Tooth Paste.—Theodore Sachs, (Medizinische Klinik, September 17, 1916) states that in the treatment of mercurial stomatitis the desideratum is to employ a preparation which will act chiefly upon the gums. For this purpose the author has elaborated a tooth paste which consists essentially of an alcohol soap to which are added the usual bleaching and flavoring agents of tooth pastes. This new preparation brings the alcohol into direct contact with the gums where it can exert its mildly tanning and astringent powers. The preparation can be employed in the same way as the ordinary tooth pastes and produces an effective cleansing lather.

Collosol argentum.—A. H. Boys, (Brit. Med. Jour., October 28, 1916) reports excellent results obtained from the use of this remedy in the following cases. A single subcutaneous dose of one mil cured a severe case of pyorrhea. Two drops placed in the conjunctival sac cured a case of acute ocular inflammation with corneal ulcer. Daily injections of 1.3 mil subcutaneously cured a case of postoperative suppuration and septic diarrhea. Oral doses of 0.6 mil cured suppurating tuberculous cervical glands in a child of three years.

ORIGINAL ARTICLES

AN INTERESTING CASE OF EPILEPSY.*

By F. M. STITES, Hopkinsville.

The various pathologies that are still classed as epilepsy illustrate how far we are yet from accuracy in medicine. With barely one exception, there is no symptom that is common to all the conditions that are included under this title.

According to Spratling, in every seizure of so-called epilepsy, whether grand mal, petit mal, focal or psychic, and regardless of the degree of severity, there is always present a decided dilation of the pupils. But beside this one uniformity, there is almost no limit to the variety of manifestations, from the briefest arrest in intellection or the shortest possible irregularity in motor activity, to the wildest delirium and the status epilepticus, all sorts of conditions are included and an infinite number of interesting combinations are possible.

Necessarily therefore, each case becomes a separate entity for investigation and treatment, and the only hope for accurate results is in the scientific analysis of an immense amount of material.

The case that I wish to report to-day has some elements out of the ordinary, though nothing that could be truly classed as unique.

Female, age 13, sixth child, first seen by me July 16th, 1916. Father living and healthy, no specific history. Mother dead, age 40, uremic convulsions after birth of 7th child. Six brothers and sisters all living and healthy. No tuberculosis, insanity, alcoholism, cancer, or epilepsy in the family history on either side.

At first examination, the personal history of this case proved rather negative. There had been no severe illness and no injury or even fright. All the organs, including the kidneys were found normal. The reflexes and co-ordination were normal. The general health had been and still is excellent; height 5 feet 2 inches, weight 115 pounds. Expression of face good and intelligence up to the average. Menstrual periods irregular, began at eleven and one-half years, intervals usually five or six weeks, duration five days, otherwise normal, no leucorrhoea.

The only clue for treatment seemed a rather abnormal desire for food and a habit of rapid eating, without proper mastication and a tendency to constipation.

The spells were first noticed about three years ago by members of the family who ob-

*Read before the Christian County Medical Society.

served that occasionally the girl would stop in her play, or whatever she was engaged in, and looking peculiarly, would seem to be unconscious of her surroundings, never falling however, and after a few moments, resuming whatever she had been doing.

For two and a half years, these spells continued with varying frequency. A spell may come on at any time during the waking hours. If the patient is eating, the movements are arrested, the face flushes, the head may or may not turn slightly to the left, and there is a curious fixed look on the face. In a few seconds the spell passes off and she resumes whatever she has been doing. If she has been talking, however, it is usually necessary to call her attention to the subject of conversation before she can resume it. She claims to be conscious of what is taking place during these spells, and if conversation is continued during the spell, she will sometimes remember most of what is said.

If she is standing, she does not fall or seem to be disturbed in her equilibrium, and she does not drop what is in her hand.

About eight months ago, she began having grand mal seizures, typical in every way, but without aura or cry. Beginning with a turning of the head toward the left, the spasm rapidly involves the whole body. The petit mal seizures continued and the grand mal attacks increased in frequency until they came about every five days, most usually just after getting out of bed in the morning; all but one or two in the forenoon.

The treatment at first consisted in limiting the diet, instructing in mastication, the use of mild laxatives, castor oil and oil of petroleum, and sodium bromide, 10 gr. three times a day. No decided change was noted and the grand mal seizures increased in frequency. After three months I gave 20 gr. of bromide at 5 A. M. and 20 gr. at 9 P. M. with no change, then added 10 gr. at noon, making 50 gr. of sodium bromide in 24 hours with no ill effects, no acne or digestive disturbance, but no improvement.

After two months of this large dosage of bromide, I began giving 10 gr. of chloral when she awoke, about 5 A. M., but this did not control the seizures.

About six weeks ago it was discovered that she was practicing masturbation and careful inquiry revealed the fact that she had been doing this since she was six and one-half years of age, often very excessively. It also was disclosed at this time that for a year or two, she had decided symptoms of homo-sexuality, being attracted by nice looking girls and greatly excited while with them and giving evidence of a strong sexual attraction for girls and young women especially, if they were good looking.

An examination showed the uterus and ovaries normal, the vagina large, the hymen absent, clitoris not over developed, the labia minora somewhat larger than normal, no evidence of local irritation that could increase the sexual perversion, except that patient complains of itching of the vulva.

She apparently made a full confession of her habits and when the evil and injurious effects of such a practice were explained to her, she gave every evidence of shame and sorrow and promised to discontinue this practice.

A close watch is being kept day and night and for six weeks there has been no evidence that she has broken her pledge. She has only had one very slight attack that might be classed as a grand mal, in the past six weeks at 6:30 A. M., and this convulsion was not general and was very brief, though she fell, consciousness being lost for only a few seconds, if at all; the patient claiming that she could hear all that was said, but could not see or speak. She still had a few petit mal seizures daily. These however, diminished in frequency soon after the vicious habit was stopped and now for the past two weeks she has had only two or three petit mal attacks and none at all for the past five days.

For two weeks she continued to take 50 gr. of sodium bromide daily with 10 gr. of chloral on awakening. I left off 10 gr. of bromide four days ago. She is alternating between castor oil and oil of petroleum as laxatives with good results.

I am sure these seizures were caused by the injurious effects on her nervous system resulting from the sexual perversion and I believe if this is corrected, her recovery will be permanent. But it will take watchful care for years and the powerful restraint of religious training to overcome this vicious practice.

It is my intention to continue the chloral for a few weeks longer in the morning, as this is the most dangerous period, and keep up the bromide until the nervous equilibrium is restored, which will probably be one or two years, of course diminishing the dose as she improves and if tolerance to the drug is manifested, it may be necessary to discontinue it temporarily, substituting some other sedative in its place, probably small doses of chloral or antipyrine in the morning for a week or two at a time.

It is a well known fact that there is danger of the continuance of the seizures even after the original cause for them has been removed, for the nervous equilibrium once disturbed by any abnormal irritant, can be easily unbalanced by lesser irritants and sooner or later the epileptic habit becomes established and the cure rendered extremely difficult. Therefore where a case has continued as long as this one, it will not be safe to withdraw the

treatment and pronounce a cure for about two years from the last seizure and for many years there will be danger of a return if there is a revival of the exciting cause.

I do not believe the importance of long continued treatment and the most watchful oversight in cases where there have been epileptiform seizures, can be too strongly emphasized.

ACUTE ANTERIOR POLIOMYELITIS.*

By W. W. DURHAM, Hopkinsville.

A disease primarily of childhood, usually affecting children sometime during the period of first dentition.

It comes on suddenly generally accompanied with fever, motor paralysis, atrophy of muscular groups, ending in contraction and deformity.

In 1840 Von Heine separated this from other types of paralysis.

In 1887 Medin called attention to its wide spread occurrence, in epidemics since then it has been occurring in Sweden, Norway, Ostra and Southern Europe, while in the United States and Canada its visitations have been particularly serious.

As has been said age is a most important predisposing factor.

Sporadic cases occur frequently in communities and sometimes develop into epidemics.

Osler says that the degree of contagiousness from person to person is slight and the infecting agent is as yet unknown. Flexner says that the virus belongs to the class of filterable organisms and is very resistant to external agencies.

The infecting agent is found in the brain, the cords and the blood, it has been found in the tonsils and pharyngeal mucosa of children, it seems to be more independent of sanitary conditions than the most common diseases.

The little fellow is not quite well for two or three days but the symptoms are not enough to arouse suspicion, when all of a sudden you find him unable to arise from bed at the usual getting up hour; there will be fever, nervousness, and more uneasiness than you would expect from a child of its years, you will find one arm and one leg or both legs and one arm may be effected; the paralysis is rarely symmetrical, and in a great number of cases not complete, some cases run a course like an acute infection, others like a meningi-

titis, and still some like acute ascending spinal paralysis. It resembles to some degree also endocarditis, pyelitis, acute rheumatism and influenza.

In the few cases which I have had in my practice, I have found it the most difficult problem in diagnosis which I have had to solve, and am sorry to say that the first ones to which my attention was called were not diagnosed until about a year afterward.

The authorities will give you several divisions of this dreaded disease of childhood, namely: sporadic, progressive, bulbar, meningeal cerebral, and polyneuritic.

I have only seen two forms, the abortive or common type and the bulbar; in the former we have temperature, somnolence, irritability, loss of motion and pain and a deeply concerned expression when aroused and because of such an elusive symptomatology many cases have been overlooked and when asked about the impairment of the limbs will be told that it was caused from the settlements of the fever, and I think that most cases in the absence of epidemics are rarely diagnosed.

The other or common type that I have had to deal with is more typical, a child becomes ill, has moderately high fever, severe pains in the limbs and back, nauseated, head swims, extremely nervous, tongue coated and begs not to be moved, and may or may not have had convulsions; from 36 to 48 hours the paralysis appears which sometimes becomes complete, and remains so for several weeks after the febrile stage is passed, and on close observation in the meantime atrophy may be discerned.

TREATMENT.

Complete isolation if possible, rest in all cases, move the bowels out well with oil, follow with calomel in small doses, keep the kidneys active and all secretions up to normal as near as possible, small doses of aspirin to alleviate pain, aconite for the fever and strychnine for the heart, if necessary, but in small doses except in the latter course of the disease: I have found that local sedatives help much to control the pain, and above all give hexamethylenamine in large doses, as it has proven to be eliminated into the subdural space, and Flexner shows that it delays or prevents this disease when administered to monkeys before inoculation.

Massage should take place in two or three weeks after the onset and continued, a great majority of cases will improve and in the course of time some will be entirely restored and in all the lesions are not as great as the symptoms would lead you to think.

*Read before the Christian County Medical Society.

ACUTE ANTERIOR POLIOMYELITIS.*

By GEORGE PURDY, New Liberty.

Infantile paralysis, epidemic infantile paralysis, acute wasting paralysis, essential paralysis of children, Heine-Medin disease, and acute atrophic paralysis is an acute atrophic paralysis of children; an acute infectious disease affecting children early in life, usually in the first three years. It comes on suddenly, often with fever and is attended with motor paralysis and atrophy of groups of muscles ending in contraction and permanent deformity.

One attack probably confers immunity.

Neither the cause or the cure of this disease is known, although it is an old disease and for many years has been epidemic in Europe. Very recently there has been much investigation and much said concerning this thing and still we are in the dark. Some of the characteristics of the causative factor have been outlined and even evidence has been found that proves its presence in certain locations at certain stages in the progress of the disease. It has been demonstrated conclusively by Flexner, and others, that the disease can be transmitted to monkeys from the nasal and throat secretions of infected persons. It is claimed that this can also be done from the blood. The preponderance of evidence at the present stage of research indicates that this is a disease caused by some pathological organism carried by the blood stream. Rosenau and Havens have succeeded in showing that the strain can be passed through eight generations in rabbits without change as to pathogenesis. They state that there is a great variation in individual susceptibility in these animals.

This disease seems to be more prevalent during the warm weather. In the recent New York epidemic, according to the daily press, there was a fairly constant ratio between the temperature variation and the number of cases reported.

The ganglion cells of the anterior cornua of the spinal cord, their neurons passing out through the anterior roots and the muscles over which they have trophic influence are the principal parts involved. In acute cases microscopically, the cord presents no characteristic external alterations. On section in the diseased portions the tissues are redder than normal and the blood vessels are considerably distended, particularly in the anterior cornua. Minute hemorrhages may be observed in this area. In older cases the cord may be somewhat smaller and the tissues denser on the affected side. One, or both, of the anterior cornua may be considerably reduced in

size. The anterior roots from the diseased area are also correspondingly shrunk and fibrous. The posterior portions of the cord present few if any alterations. The lesion is most often in the lumbar enlargement and next in the cervical but may be at any location in the cord. There is a marked structural change in the neuroglial tissue. The ganglion cells are much altered. They may be swollen and colorless or in older cases shrunk or altogether gone. Even in recent cases, no doubt, some of these cells have disappeared. The anterior roots are degenerated and the muscles to which these affected fibres go. The roots showing the ordinary forms of degeneration, the presence of globules of fat in the sheaths and swelling and fragmentation of the axis-cylinders. The muscles very early show fatty degeneration and atrophy.

Degeneration in the pyramidal tracts in the medullated fibers of the cord may also be found.

The symptoms of acute anterior poliomyelitis are the ordinary symptoms of infection; excessive irritability and hyperesthesia, headache and pains especially in the back and legs and later in the arms. The temperature in serious cases may be high but the ordinary rectal temperature found by Frazer was 101 degrees to 103 degrees. The pulse is rapid, generally over 120. Drowsiness and heaviness may be noted in some cases with twitching and jerking during sleep. Stiffness in neck and back is frequently present. Tenderness, generally worse in the lower extremities, is also a symptom. The reflexes are generally absent. Paralysis usually comes on the third or fourth day. In a few cases this symptom comes immediately and in others the course of the disease may be so light that paralytic symptoms may not be seen at all. The acute condition lasts from a week to ten days.

Holt reports 560 cases with the paralysis distributed as follows: one lower extremity, 229; both lower extremities, 176; general paralysis of all the extremities and more or less of the trunk, 19; one lower and one upper extremity, 16; one upper extremity alone, 14; both upper extremities, 2; and all other varieties, 8.

Lovett and Lucas studied 635 cases and came to the conclusion that paralysis of one leg occurred four times more often than paralysis of both legs, and that lateral paralysis was more common than crossed paralysis.

While we do not know the exact nature of this infection or virus causing this disease, it has been shown to exist in certain excretions of patients suffering from it and it has also been shown that certain forms of lower life may harbor it, consequently the usual prophylactic measures that are exercised in many

*Read before the Eagle Valley Medical Association.

other infectious diseases should be used, such as, quarantine, disinfection of excreta, screening against flies and mosquitoes, elimination of bed-bugs and fleas and the keeping away of dogs, cats and rats. The disease should be promptly reported to the board of health, whether there be a legal requirement or not, and in turn that department should report to the school people. There is a difference of opinion as to the length of time the quarantine should stay in effect due to the imperfect knowledge concerning the nature of the disease. King thinks two weeks sufficient, while on the other hand Lucas and Osgood claim to have found the virus present in the nasal secretions four months and 204 days respectively, after the acute infection.

The virus has been found in the nasal secretion of persons attending acute anterior poliomyelitis.

There is no known cure for this disease at the present time. Research is being made by Flexner and others for an anti-serum but so far none has been found. Frequently, however, cases abort, or recover, without paralysis.

The treatment indicated in the first stages is that which will relieve the acute congestion in the cord and brain. A brisk purge of castor oil, calomel or a saline is proper. The sphincters are rarely involved but bladder irritability may be lost. Retention should be discouraged. For the pain, excessive nervousness, restlessness and insomnia opiates are the best remedies. The deodorized tincture of opium is probably the most applicable. Dry warmth may be used to soothe painful joints.

Of course the sick room should be kept very quiet and sudden noises and too bright and too much light should be avoided. The diet should be meagre during the active stage but as soon as this is over it should be pushed in order that the general strength may be recovered rapidly. The patient should be made as comfortable as possible. A good bed and soft cushions are necessary. During the early stages of the paralysis persistent care must be taken to maintain a correct position of the limbs to prevent contractions. Gibney and Wallace advise that the legs be kept straight or in slight flexion at the knees, in line with the body and with the feet at right angles with the legs. Gentle massage is useful early. The child should be encouraged to make slight voluntary efforts to use the paralyzed muscles as early as possible. Voluntary efforts at movement are more effective than other means of causing muscle activities. The use of electricity should be begun as soon as all the active inflammation in the cord has subsided. Jones states that this will take from three to eight weeks from the beginning of the disease.

An article under Therapeutics of Infantile Paralysis in the *Journal of the A. M. A.*, July 8, 1916, states that galvanism should be used on the nerve trunks, gently and not too strong, while the muscles are caused to contract by faradism as long as they react to that current. If they do not react to the faradic current, the galvanic current should be used to cause contractions by making and breaking. The rapidity of the making and breaking galvanic current should not be too great nor should any kind of muscle stimulation be continued too long at any one sitting in fact at first only a few contractions should be caused.

There are those who question the efficiency of electricity in this disease and still others who will not permit their patients to be massaged but it is unanimously agreed that rest in bed, graduated exercise, (with the word graduated underscored) and hygienic living afford the means to the greatest improvement.

A very important note to remember is that over use of the affected muscle is distinctly harmful and prevents the return of proper function.

It has been learned recently that paralyzed muscles of long standing may be brought to use again if given skilled training.

In the attempt to bring back these affected organs various kinds of splints, etc., have been successfully used, a specific description of which cannot be given here because each case requires its own peculiar design.

If after improvement has stopped or after one or two years of scientific treatment the recovery is not satisfactory and after correct splinting and muscle training are evidently useless, the deformities should be referred to the surgeon.

Fecal Stasis and Eczema Madidans.—W. H. Axtell (Northwest Medicine, October, 1916), states that among the many distressing conditions secondary to fecal stasis and angulation of the sigmoid is chronic, weeping eczema. From an experience of eight cases of this obstinate skin lesion the author finds that it can be cured promptly by treatment directed to the relief of the intestinal disturbance. This treatment consists in the use of daily enemas, mild laxatives, and a regulated diet. Through the sigmoidoscope the sigmoid should be inflated and elevated, and any ulcerations of its mucosa treated by direct applications. Under such treatment the "weeping" will stop within two days and the eczema will be completely cured in two weeks. All local treatment of the eczema should be stopped except hot water fomentations where there is skin infection.

CYST OF PANCREAS.*

By FRED L. KOONTZ, Louisville.

On Friday, November 10th, 1916, I was called to Hawesville by Dr. Ira Cosby, to operate upon an abscess of the liver. The patient, E. W., was thirteen years of age.

Upon reaching the home some five or six miles in the country, I was struck by the appearance of the patient, which I will describe in as much as he appeared to be suffering with some unknown vagary of the internal secretions. That his physical development had been presided over by an "hyper" of the thymus, hypophysis or testes, or by all together, was apparent and in as much as the pancreas is supplied with an internal secretory apparatus, independent of its specific function, in the islands of Langerhans, this apparent coincidence, if coincidence it be, is worthy of record for future investigations.

Though but thirteen years of age, his head was large, his hands and feet proportionately large but his stature was short. He had a deep bass voice and his body was covered all over with hair. On the pubes it was especially black and luxuriant. His penis was the development of a man. His beard was black, thick and stiff. He had been shaving since he was eleven years of age. He was of average intelligence though very reticent.

The impression made upon me by seeing this boy for the first time was profound. Add to the developmental anomaly, the serious suffering, the rapid waste, the profound weakness, minute sweating, the aged, sallow, pinched, shrunken, anxious countenance of the desperately ill. The rapid, labored difficult breathing with the whole face suffused, as if an apoplectic, the mottling tinted deep with cyanosis, produced a picture that was shocking.

According to the history obtained from the family he had been ill for thirty-three days; and during thirty of them he had been treated for malaria by a physician who lived in the neighborhood. On the thirty second day of the illness Dr. Cosby was summoned from the County Seat and made a diagnosis of abscess of the liver. This was confirmed by another physician of the town. The history gave his pain as paroxysmal, intense at times, followed by relief: the coeliac neuralgia of Fredereich. There had been occasional vomiting though he had retained his food fairly well. Severe constipation existed and his temperature ranged around 102. He was free from jaundice.

On inspection, his entire right upper quadrant was bulging. The summit of the tumor was in the right nipple line and well up un-

der where the normal free border of the liver should have been. It was rounded, hard and smooth with the abdominal muscles almost in tetany. The dyspnoea was marked and the appearance as I have described. His pulse was very fast, ranging from 140 to 150 and could not be accurately counted. This extreme rapidity had continued for thirty days. His father had saved a stool which appeared normal in color and consistence though containing much bile. This fact was the first thing that made me suspicious of the diagnosis. The epigastric tumor formation, with the long continued rapid pulse, the normal stool containing bile together with the picture of shock rather than sepsis, determined my diagnosis of cyst of the pancreas, though the fever and the distinct liver location threw some doubts upon the correctness of the diagnosis. At any rate I refused to operate in the home. If such renowned and skillful master surgeons as Mickuliez and Billroth had in four different attempts to extirpate a cyst of the pancreas were compelled to abandon the project, it was no place for a nervous surgeon surrounded with nothing but atmosphere.

My counsels prevailed and we brought the patient to Louisville.

In the hospital, his urine was as follows: Specific gravity 1030, strongly acid, albumen present, sugar present, and a few hyaline and granular casts.

The blood examination was as follows: Whites 7600, reds 5,510,000, neutrophils 70 per cent, small lymphocytes 19 per cent, large lymphocytes 7 per cent, basophiles 1 per cent, eosinophiles 3 per cent, which is not a striking picture of concealed pus.

The following gentlemen, whom I met in the hospital, I invited to see and examine the patient: Drs. Schachner, Simrall Anderson, John F. Freeman and Oscar Bloch. All of whom were extremely guarded as to diagnosis but of an unanimity as to prognosis.

After once more impressing upon the parents that the case was of such serious import that he might die upon the table, I proceeded to open the abdomen under general anesthesia, though Dr. Schachner advised local. The incision was from the right last sternocostal junction downward for four inches.

The liver was black, smooth and somewhat shrunken and in no way involved in the process except from strangulation of blood supply. The stomach was stretched across the abdomen intimately adherent to the anterior wall of the tumor. It was so elongated that I think two fingers breadth would have spanned it at its greatest width. The liver was pushed far up and as the summit of the tumor appeared to be well under the liver I chose the gastro-hepatic route of attack. I experienced great difficulty in dissecting the

*Read before the Jefferson County Medical Society.

stomach off the tumor sufficiently to permit me to get between the stomach and liver, through the two peritoneal layers of the gastro-hepatic omentum and the posterior parietal peritoneum which covered the tumor. The liver had to be hooked up as far as it was possible to crowd it. The gastro-hepatic omentum was intimately adherent to the anterior wall of the tumor and was exceedingly friable. I finally cleared sufficient space to attack the tumor wall. It was absolutely impossible to bring the tumor up where it could be opened outside the abdominal wound. At this point I placed an aspirator into the sac and filled it with a dark clear fluid. I then connected the large power aspirator, that is connected to the water works system intending to empty to the point that I could haul the sac out of the cavity. This aspirator arrangement failed to work for reasons that I found later that particules of pancreatic tissue blocked the needle. This being denied me, I then attempted to sew the parietal peritoneum to the cyst wall in order to wall off the general cavity of the peritoneum for the reason that the action of pancreatic juice upon even live tissue is disastrous. I was destined to be defeated in this however for the wall of the sac was so friable that my stitches repeatedly cut out.

Having to abandon this procedure I was in exceedingly deep water. I then coffer dammed my avenue of attack by sponges, boldly plunged a knife into the tumor and immediately blocked the opening with my finger while my assistant carefully wiped away the fluid lost. The assistant then grasped the wall on both sides of my finger with forceps while a large drainage tube somewhat larger than my finger was being prepared. This I quickly substituted for my finger with the escape of very little fluid which was amply provided for by the sponges. Fluid was now coming rapidly through the tube with masses of pancreatic tissue. The tube was secured by purse string sutures after the manner of a cholecystostomy and held securely without leaking. The soiled sponges were now removed and a light packing placed about the tube while I make another effort to wall off the peritoneal cavity. This was only indifferently well accomplished I made rapid closure then leaving a wick of gauze about the tube. At no stage was it possible to drag the sac into the wound. Once in bed I was compelled to attach a bulb syringe to the drainage tube to clear it occasionally of "sweetbreads." He stood the operation well considering. The operation consumed an hour and thirty minutes and his pulse was no worse than when we began. He rallied from the anesthetic without vomiting, his pulse slowed considerably, was draining well, the swelling gone. Eight hours later was com-

fortable, asked for water, drank it, retained it and after a few minutes, died instantly.

Post mortem was refused.

True cyst of the pancreas is relatively rare. Reimo Segie, in 11,500 autopsies, found 132 neoplasms of the pancreas and of that number 127 were carcinomatous, two were sarcomatous and two were true cysts. In 1514 autopsies at the Montreal General hospital not one true cyst was found.

Moynihan's classification is as follows:

- Retention cysts,
- Proliferation cysts:
 - Cystic adenoma,
 - Cystic carcinoma.
- Congenital,
- Hydatid,
- Hemorrhagic.

Virchow has described the retention cysts as blocking of the canal of Wirsung or some of its tributaries, by stone, cicatrix or external pressure. He also points the extreme difficulty in determining the exact origin of the cyst.

Rudolph's case, Bonn 890, was of such a variety that it could be excised and the duct was clearly seen. In Hagenbach's case he was able to demonstrate two dilated radicles. In Dixon's case, *Medical Record*, March, 1884, the duct could be seen. Post mortem specimens have been found by Virchow, Klebs and Gould. Fitz's case of Boston, *Journal American Medical Association*, August, 1890, was probably a proliferation cyst.

As to hydatid cysts of the pancreas, Masseron collected only five cases and these were all post mortem.

One case of congenital cyst has been reported by Shattuck, the patient thirteen months old. Richardson reported a pancreatic cyst at the age of fourteen months though not claimed as congenital.

Hemorrhagic cysts are probably accidental, as to hemorrhage, as pointed out by Senn, Kuhnhort, Schroeder and Fredericich thought that they might originate from a hematoma in the pancreas.

Korte has given us a clear description of those cases that appear in the region of the pancreas and yet are not of that origin. A peripancreatic cyst may form in the cavity of the lesser peritoneal cavity and containing a little accidental pancreatic secretion. He remarks significantly that in some recorded cases the origin of the cyst within the pancreas is purely hypothetical.

Mr. Jordan Lloyd makes it plain that the diagnosis is too often made upon insufficient grounds; that the mere presence of pancreatic fluid is not sufficient evidence of its origin but only of its propinquity.

These cysts are either unilocular or multi-

locular. The youngest patient was thirteen months and the oldest seventy-six years.

Hagen reports a case in a baby thirteen months old as complicated that he was compelled to go through both walls of the stomach to reach it.

From Gussenbauer's case, the first treated by incision and drainage, there has been just 84 cases so treated; nine dying more or less immediately.

Takasu found 8 deaths in 64 operations.

I believe that this case was a true cyst of the pancreas and I will always regret my inability to get a post mortem.

VACCINES AS PROPHYLACTIC AND THERAPEUTIC AGENTS.*

By G. H. SHERMAN, Detroit, Michigan.

Of all the remedial agents in the treatment of infectious diseases, the problem of active immunization as a therapeutic measure, is receiving the most attention at the present time. When diphtheria antitoxin was first given to the world and its wonderful therapeutic efficiency recognized, it was naturally supposed that by a careful selection of animals and bacterial cultures equally potent immune serums could be developed for the treatment of most other, if not all of the infectious diseases. But as a whole this line of work has been disappointing. Antitetanic serum possesses reliable prophylactic properties, but is not a reliable therapeutic agent. Antistreptococcus serum possesses marked therapeutic efficiency when given early and in large doses, in streptococcal infections. Antipneumococcus serum, as a whole, has been disappointing. Meningococcus serum has given very striking results. Immune serums for the treatment of infections by other infecting organisms have not proven of practical value. The main reason for this inability to produce efficient immune serums in the treatment of infections by the more common infecting organisms lies in our inability to immunize animals to a sufficient degree of intensity so a reasonable amount of the animal's blood serum will contain sufficient antibody to be of practical value when diluted to the extent of the proportions of the human body. Furthermore, all immune serums contain a large amount of protein abnormal to man and consequently are always associated with the danger of producing anaphylaxis.

The discovery of salvarsan stimulated a hope that chemical compounds could be produced that would be specifically destructive to pathogenic micro-organisms of the more common varieties and harmless to the patient, but nothing of practical value has been de-

veloped along this line. Even salvarsan has not come up to what was expected from it because it is practically impossible to kill all the micro-organisms responsible for the infection and in so far as the killing of the *spirochaete pallida* with salvarsan does not immunize the patient, and spirochaeta left may continue to perpetuate the disease. This would apply equally in case specific germ destroying drugs were applied in the treatment of infections by pyogenic organisms. So, after all, the important consideration in the treatment of infectious diseases is to bring about active immunization, because active immunization not only destroys the organisms responsible for the infection, but prevents possible remaining organisms from further development.

That vaccination with attenuated or killed organisms applied prophylactically or therapeutically, is the best means at our command to produce active immunization, is now well established, but the advantages of this means of controlling infections is not being sufficiently appreciated because the workings of the immunizing mechanism under the rapid antigenic influence of killed organism injections as compared with the tardy or inhibitive antigenic action of the live virulent organisms responsible for the infection, is not taken into account.

Therapeutic immunization is being neglected, not for the want of clinical evidence for the use of bacterial vaccines, but because prevailing theoretic conceptions do not recognize the difference between the antigenic properties of killed, as compared with live virulent organisms, when in contact with live tissue cells. The prevailing notion is, that if live virulent organisms with all their toxic properties in an active infection, will not arouse sufficient protest in tissue cell activities to stimulate antibody production, there is no logical ground for believing that killed organism injections will do better. This position looks very reasonable but a closer examination of the proposition will prove it fallacious and not in accord with ascertainable demonstrations.

Germs, as well as other forms of life, must digest and assimilate food to live and multiply. Digestion necessitates the presence of some ferment, so the germ for the purpose of appropriating food secretes intra-cellular or extra-cellular ferments which dissolve or prepare the food with which it comes in contact, so the food can be absorbed into the germ cell and assimilated and it is in the capacity of performing this function that the activities of the live organisms in an active infection differ from that of killed germs when injected into living tissues. Rate of multiplication is no doubt the most important factor concerning the virulence of an organism and rate of

*Read before the Pendleton County Medical Society.

multiplication necessarily depends on the effectiveness of the extracellular or intracellular ferments, which the germ secretes for the purpose of preparing the food on which it lives. A germ that possesses active digestive capacities is naturally a dangerous organism to the tissue cells with which it comes in contact. When leukocytes come in close proximity with such organisms instead of ingesting them they retreat because the digestive capacity of the germs is associated with some destructive, irritating property which the leukocyte can not tolerate or cope with and consequently retreats; or a negative chemotaxis. In the case of fixed tissue cells this digestive capacity of the germ is often so destructive that tissue necrosis sets in, resulting in pus formation or gangrene.

When tissue cells are confronted with micro-organisms that possess such destructive properties, instead of becoming stimulated for antibody production they are overwhelmed, fatigued; the defensive mechanism becomes handicapped and immunization retarded or inhibited while, meantime the infection continues to progress until the immunizing mechanism gains the ascendancy and if adequate immunization does not develop in due time a fatal termination will follow. The favorable turning point of an infection is coincident with tissue sensitization and a resulting sensitization of the infecting organism. Besretka in some experimental work for the purpose of determining the influence of immune serums on pathogenic bacteria found that the immune substance contained in the serum for a few hours with a bond sufficiently permanent to withstand repeated washings in normal salt solution and that after an organism has become thus sensitized it no longer possesses its former pathogenic properties; the organism having become very susceptible to phagocytosis. In other words, the immune substance contained in the serum combined with the digestive ferments of the micro-organism and in a sense inactivated or crippled its digestive apparatus and by this means rendering it harmless to the leucocytes, resulting in a positive chemotaxis.

All our prophylactic immunization with either attenuated or killed organisms, is based on the knowledge that adequate antibody production will follow these inoculations without developing the toxic symptoms which prevail in virulent infections and clinical experience has abundantly demonstrated that this antigenic property of killed organism injections is just as pronounced when employed in the presence of an infection as when employed prophylactically, providing the killed organisms are injected before the tissue cells have become fatigued from the toxic influence of the infection.

Experimentally it has been found that when live pathogenic organisms are injected intravenously the number of organisms in the blood will have materially diminished within four or five hours and in the course of time will disappear entirely. If, however, a very virulent organism is injected a very small dose will bring the animal down. Vaughan, (*Protein Split Products in Relation to Immunity and Disease*, p. 208) for example, worked with a pneumococcus so virulent that .000001 c.c. of a twenty-four bouillon growth, when injected intraperitoneally would invariably kill a half grown guinea pig. The fact that under ordinary conditions the blood will take care of and destroy a fair amount of pathogenic organisms would indicate that when infections develop spontaneously, entirely different conditions prevail than where animals are injected experimentally. Let us take a case of lobar pneumonia for example. Here we have, in the early stages of the disease, pneumococci abundantly present in the blood associated with evidences of localization of the infection developing in the lung. From the great number of pneumococci present in the blood it is evident that they have maintained themselves at least for several days in the blood stream. Usually these pneumonias are preceded by a pneumococcus coryza or some other localized pneumococcus infection from which the pneumococcus gains entrance to the circulating blood. Naturally, these germs gain entrance to the blood in comparatively small numbers. If the leukocytes were actively engaged in phagocytosis these pneumococci would be destroyed before they could multiply sufficiently to be of any consequence; but from the fact that these comparatively few pneumococci, increase so rapidly in number, it is evident that the resistance of such a person is nil to that particular organism with a probable condition in which very few, if any pneumococci are being destroyed by the phagocytes; the pneumococci not being sensitized the phagocytes do not dare to attack them. Pneumococci are found most abundantly in the blood about the time of the initial chill when localization of the infection begins to develop in the lung. From this time on, the number of pneumococci in the blood decrease rapidly if the patient progresses favorably, while at the same time they are multiplying rapidly in the lung tissue. This would indicate that active immunization for the destruction of germs present in the blood does not develop until tissue involvement takes place. We find practically the same condition to prevail in blood infections by other organisms. The streptococcus viridans will maintain itself in the blood for months and will only disappear, if at all, after a localized infection like arthritis develops.

Staphylococci in cases of pyemia will not leave the blood until localized abscesses develop. Cases of puerperal sepsis are particularly dangerous if no localized infection takes place. In typhoid fever the typhoid bacillus is most abundantly found in the blood during the early stages of the disease, and will disappear after Peyer's patches become involved and a positive Widal develops. From this it is fair to conclude that in case of blood infections, localization of the infection with tissue involvement is essential to free the blood from the infecting organism. That is, while germs are circulating in the blood as the result of a natural source of infection, no material influence is brought to bear on tissue cells for antibody production until tissue cell themselves become involved in the infective process and the progress of the cases will be in direct proportion to the amount of antibody that will develop as a result of such tissue involvement. If cell sensitization for specific ferment or antibody production develops rapidly these antibodies will combine with the germs circulating in the blood, sensitize them, put their digestive mechanism out of commission and make them susceptible to phagocytosis. During this process of ingesting and digesting micro-organisms by the phagocytes, they also secrete ferments which have a destructive influence on other germs and in turn render them susceptible to phagocytic action. By this means this germ destroying process becomes cumulative and what appears to be a desperate condition may clear up within one or two days. If tissue cells would always become adequately sensitized for antibody production from localized infections, spontaneous recovery would be the rule, but unfortunately live virulent organisms do not always possess sufficient antigenic properties to stimulate adequate antibody formation; on the contrary, through their destructive influence tissues are crippled or hindered in producing antibodies. In a case of pneumonia, for instance, live virulent pneumococci are attacking lung tissues. Here the digestive activities of the pneumococci are frequently so toxic that instead of developing immunization the patient dies from toxemia. In other words, live virulent organisms can not be depended on as possessing sufficient antigenic properties to produce enough antibody to arrest the infection. A low opsonic index in lobar pneumonia foretells a probable fatal termination and a low leukocyte count in acute infection is always regarded as foretelling an unfavorable prognosis. This would indicate that the infecting organisms under such conditions are sufficiently toxic to cripple tissue cells in their defensive mechanism for antibody production and to cause the leukocyte to retreat instead of making an attack. From this it is

clear that the most important factor in gaining control of an acute infection consists in inducing at least some tissue cells to become actively engaged in ferment or antibody production to sensitize infecting organisms, cripple their digestive function and thus prepare them for destruction. In other words, tissue must be cultivated. This is most effectively accomplished by having them operate on attenuated or devitalized organisms, organisms that will stimulate their defensive faculty but not overwhelm or destroy it. So, if we inject into healthy tissues a suspension of killed organisms of the same kind that prevail in an acute infection like pneumonia, puerperal sepsis, pyemia, erysipelas, etc., tissue cells are brought in contact with these organisms. They are intruders that possess the biochemical characteristics which prevail in an actual infection, minus the destructive tendency of a live organism. Being intruders, the tissue cells become actively engaged in eliminating them by a process of digestion through the action of cell secreting specific ferments. Being killed the germs can not secrete ferments that have a destructive tendency on the tissue cells, consequently, the entire cell energy may be devoted to specific ferment or antibody production. After tissue cells have once become trained, stimulated, sensitized, into antibody production they, as a means of guarding against a similar germ invasion, continue to produce this specific ferment for some considerable time after the intruding organism is disposed of. These specific ferments by means of the circulating medium are conveyed to at least some of the infecting organisms, combine with them, sensitize them, rob them of their virulence by interfering with their digestive function and thus make them susceptible to phagocytic action. Leukocytes will then attack them and while digesting them becomes sensitized and continue to produce ferments which will in turn unite with more germs and render them susceptible to destruction and by this means the immunizing process becomes cumulative.

This, to my mind, at least offers a rational explanation of what takes place in extensive acute infections under the influence of bacterial vaccine inoculations when they are given early in the course of the infection. The early use of bacterial vaccines in a case of lobar pneumonia, forcibly illustrates this action. If the vaccine is given within a few hours after the initial chill, with but few exceptions, marked improvement may confidently be expected within 24 hours and by repeating the injection at this time a normal temperature with other improved clinical symptoms will in most instances obtain within the second day from the onset of symptoms. As a rule lung consolidation will be avoided and

with a few more inoculations at one or two day intervals the patient will go on to recovery by the fourth or fifth day of the disease. Similar results are also obtained from the use of vaccines in other extensive acute infections.

From experience we find that by far the best results are obtained when they are given early. This would justify the assumption that after the system becomes extensively invaded with toxic materials for a number of days, tissue cells lose their power to respond under the influence of a stimulus. Some cases however, respond favorably even under extremely toxic conditions. On the other hand, just after the onset of symptoms as shown by fever, inflammation and pain the immunizing response to vaccine inoculations is most pronounced. This in all probability is due to some preparation going on in tissue cells that will make them act quickly when properly stimulated.

Theoretically, it would appear that in extensive toxic infections, vaccines should be given in small doses but from experience we find the reverse to be true. Extensive acute infections require larger doses at shorter intervals than less extensive acute or chronic infections and the realization of this fact is important. No reactions worth considering follow the hypodermic use of vaccines in extensive acute infections when given in doses three to four times the usual initial dose employed in chronic infections. Furthermore, inoculations are preferably made at daily intervals until the acute symptoms subside, whereas, in chronic cases they are preferably given at five to seven day intervals. In less extensive acute infections like colds, tonsillitis, otitis media, conjunctivitis, slight wound infections, etc., vaccines are preferably given at one or two day intervals until the acute symptoms subside but treatment should be started with the usual small dose and then gradually increased as indicated by the amount of reaction from the previous inoculation. The best results are obtained by guaging the dose so marked reactions are avoided.

Since killed organisms, when injected into healthy tissue, are better antigens to stimulate antibody production than the live organisms responsible for the infection, the enormous therapeutic advantages of bacterial vaccine inoculations is apparent. In the application of this therapeutic measure several factors deserve special consideration. In acute infections early treatment, while tissue cells are most responsive to the antigenic influence of the vaccine, is most important. This necessitates the employment of stock vaccine on a clinical diagnosis for at least one or two treatments. The pathogenic organisms responsible for the infections encountered in the daily routine of practice are well enough known to

give a clinical picture in most acute infections, sufficiently characteristic to make a diagnosis for the purpose of giving a vaccine. Mixed infection being common it is advisable to give a mixed vaccine corresponding to the probable infecting organism.

In this connection it is well to realize that comparatively few micro-organisms are responsible for the major portion of the infections encountered in the daily routine of practice. Outside of specific infections like gonorrhea, typhoid fever, whooping cough, tuberculosis, cerebrospinal meningitis, and diphtheria, the pneumococcus, streptococcus, staphylococcus and colon bacillus cause much the larger portion of the dangerous infections. In acute infections of the upper and lower respiratory tract the pneumococcus, streptococcus, with the staphylococcus as a secondary invader are the dangerous infective agents and should always be guarded against by giving a vaccine containing these three organisms at once. The vaccine should be polyvalent and contain the virulent types of organisms responsible for respiratory infections. The micrococcus catarrhalis is also partially responsible for most catarrhal conditions in the respiratory tract so this organism may be included in the vaccine to advantage. When an influenza bacillus infection is present this organism should also be added to the vaccine.

The importance of treating these nose, throat and bronchial infections, commonly known as colds, by therapeutic immunization can not be overestimated. All the more serious ailments like pneumonia, endocarditis, rheumatic fever, mastoiditis, sinus infections and eye infections have their origin in these so-called colds. If these minor infections are treated with bacterial vaccines an active immunity is established before the more serious complications have a chance to develop. In all my experience I have never known of a pneumonia or other serious complication to develop where vaccines were employed in the preliminary infection. It is true that most people do not consult a doctor when they have a "cold" but this is more the doctor's fault than the patients'. If doctors would use vaccines regularly in the treatment of "colds" and show the patient that something really worth while can be accomplished, very few of these sufferers would neglect going to the doctor.

Infections of the abdominal viscera and pelvic organs, aside from specific infections, are caused by the colon bacillus, streptococcus, pneumococcus, and staphylococcus and mixed infections by two or more of these organisms are common. So in the treatment of infections in this part of the body it is always advisable

to give a combined vaccine containing these four organisms. In surgical conditions, however, operative interference should not be neglected while the vaccines are being employed. The same rule regarding dosage should be followed out as in infections of other parts of the body. In extensive acute abdominal or pelvic infections one c.c. of the usual stock suspension should be given at daily intervals until the acute symptoms subside and at two or three days intervals after that. In chronic infections involving abdominal viscera or pelvic organs it is best to start treatment with small doses, gradually increasing them and making inoculations at five to seven day intervals.

From our present knowledge concerning the superior antigenic properties of killed organism injections, the advantages of giving vaccines in septic surgical cases should not be questioned. The advantages of therapeutic immunization in infected wounds are well brought out by R. H. Jocelyn Swan of London. (*The Lancet*, November 18, 1916) in the treatment of septic gun-shot wounds. He admits that at first he considered vaccines of minor importance, but soon recognized their advantage. After two years' experience he is so favorably impressed with this method, that he "now directs that every case arriving from overseas with a septic wound should receive an initial dose of mixed polyvalent vaccine of proteus and streptococcus" until a bacterial examination can be made. In most of these cases stock vaccines are employed through the entire course of the infection. Many a person has been permanently crippled and some lives have been sacrificed as the result of slight wound infections. In the treatment of these cases we should never lose sight of the fact that, aside from a possible tetanus infection, the streptococcus is the most probable dangerous organism, so, to be on the safe side, a polyvalent streptococcus vaccine should be given at once. The staphylococcus being a common complicator, this organism may be combined with the streptococcus to advantage in the treatment of these cases.

It is not necessary to go into further detail to bring out the extensive usefulness and wide applicability of therapeutic immunization. The points I wish to emphasize are that in so far as extensive acute infections are most dangerous and at the same time most amenable to vaccine therapy, when treatment is started early it should become a routine with every physician to find an appropriate vaccine at the earliest possible moment in every acute infection.

Since minor acute infections are the forerunners of the more severe types, they should

also be brought under control by therapeutic immunization.

The best way to my mind to avoid prolonged illness from chronic infections is to cure the infection before it becomes chronic. The early use of appropriate bacterial vaccines will more nearly accomplish this end than any other means at our command.

Bacterial vaccines are also efficient remedies in the treatment of chronic infections and frequently striking results are obtained, but, as a whole, progress is not as rapid as in acute infections and in some cases of long standing the results are negative, because the continued infection has so crippled the immunizing mechanism that it will no longer respond. Then why postpone vaccine treatment and allow such an unfavorable condition to develop?

CHRISTIAN ETHICS.*

By REV. E. K. PIKE, Falmouth.

It affords me great pleasure to be called upon to address this intelligent body of professional men, men of refinement and culture, yea, and of character, men who labor not only for pecuniary rewards but also for the uplift and betterment of society. I would not presume upon your intelligence by addressing you upon the anatomy of the human body or upon the great science of pathology, for such an attempt would be like that of the minister that was addressing a company of farmers on the text "He that soweth sparingly shall also reap sparingly." In his remarks he said; "Now if you wish to reap a great harvest you would not sow one or two bushels of grain per acre but you would sow eight or ten. So my attempt to address you on the science of medicine would be equally as ridiculous. But may I not say something from some other point of view that might be of some service to you and your profession? It may be that you have not thought seriously about the greatness of your opportunity and the magnitude of your responsibility in following your calling. If it is a fact that your vocation leads you to deal with a being that is more than dust and is more than one substance, should we not give him full consideration? Man is a complex being in his unity, with reference to his personality he is one, with reference to his substance he is two; with reference to his nature as distinguished from his substance, he is three. He is a unity in personality a dichotomy in substance, a trichotomy in nature. He is one in person but in the unity of his personality he is two-fold in substance, being both material and immaterial, and three-fold in na-

*Read before the Pendleton County Medical Society.

ture, having a body, soul and spirit. For a knowledge of the distinction between body and spirit we are indebted to the Bible and science, for a knowledge for the distinction between soul and spirit we are indebted to the Bible and religion wholly and solely. The body is the lowest part of man's nature: it is compounded of material elements, the base of whose construction is dust. Of itself it is nothing but an arrangement of passive and thoughtless organs, prepared and systematized for the use of a power or powers, which it cannot originate, but only serve. Yet it is an essential part of man's nature as man, and is the most exquisitely constructed thing in the material world, the most wonderful of all chemical compounds. It is the masterpiece of God's terraqueous workmanship. It is a magnificent structure of more than 250 bones clothed with muscles and tied together with a thousand ligaments, the whole invested with a skin containing 200,000,000 of pores and enclosing three grand cavities in which are organs of wonderful functions and power.

The vital condition of the body is subject to continual change; such changes being the result of the action of four forces: mechanical forces, chemical forces, vital forces and mental forces. Life with relation to the body is an invisible, imponderable, intangible immaterial energy.

There are many theories with reference to the source of animal life: It may be one of the manifestations of man's spirit breathed into man's body by God the maker in the day of man's making.

It may be something individually distinct from man's spirit, an emanation from Deity, *per afflatum*.

What it is we do not know nor shall we speculate any farther. But we do know it is not the result of physical organization, for it is the *formative* principle of the body, that which induces in matter organization, therefore it must exist before the development of the body. So to this masterpiece of God's work of creation you have given much time and study. It is the house in which man lives and it demands the greatest care in order to maintain its preservation, and all that a man has he will give for his life, and yet he commits the keeping of his life and that of his family into the hands of his physician for there is no one he trusts more and no one more welcome in his home. This being true what character of man should the physician be?

1. He should be unselfish; and should not enter the medical profession or calling simply to settle the bread and meat question. This should be the least thought in his mind and engage the smallest part of his time, for his calling, like that of the ministry, is too sacred

and holy to be commercialized. So the all-absorbing thought of his mind should be that of relieving and healing suffering humanity. This compels him to travel early and late, through cold and heat, wind and rain, snow and sleet, thinking not of himself but of those to whom he has been called to minister.

2. He must not only be unselfish but he must in the second place be kind. For this old world is dying for kindness. We all want it and long for it and in this life is the place to show it. If we are to help broken-hearted people it must be now and here, for in heaven they have no sorrowing spirits. If ever we are to give material aid and sympathy and comfort it must be on earth, for in the skies there is no lack of bread, and God has wiped the tears from all faces. They do not need our comfort up yonder. The earth, with its widespread misery, and time with its countless woes and afflictions, is the place and hour for the exercise of the love we profess to have for the individuals and the whole human race. The Georgia evangelist, speaking of heavenly recognition, said it was earthly recognition he wanted, and that it must be given now, for when he was in heaven he would be in such a blessed condition he would not care whether he was recognized by people or not.

Everything points to this earth and the time in which we live to prove our love in the exhibition of kindness; and yet some people are letting this one opportunity of eternity go by unimproved forever. It can never be recalled. This is our only probation. We pass this way no more forever, and yet there are many who are letting this one chance to do good and be kind to pass by eternally.

What we want is kindness in life not in death. It is not flowers scattered over a woman's coffin-lid that will make her happy, but a bunch of them tied together in the form of a bouquet and given her with the words "I love you," that makes her pulses leap, the crimson come into her cheek and light into her eye and the warm happy feeling rush to her heart.

We want kindness shown us in life. This is what our friends want; this is what our servants look for, this is what the children need, they crave to be treated gently and kindly in life, not wept over in death. Hearts everywhere cry, "treat me lovingly now." When dead we do not hear the cries of affection around the coffin, or feel the tears dripping from overflowing eyes on our faces. Be kind now.

3. In the third place he should be sympathetic in his nature. He should enter into the sympathies of the suffering and of those, who are much concerned. This will give him a greater concern for the patient's recovery and constrain him to use every means at his com-

mand in treating the case. He will watch closely every pulsation of the heart and every vibration of the lungs that he might be able to relieve the sufferer and master the disease. And on his way through the darkness of the night, not able to see which way he is going, he is thinking of his patients and the best remedies to be applied.

4. In the fourth place the Doctor, above all other professional men, should be a man of high moral character; a man that will not stoop to little things that are not becoming to a man of his high calling or profession, he should pass them by. That fraternal spirit that is characteristic of men who occupy the highest vocation in life, should be found among the men of the medical profession, for we feel that when it is properly followed it is a divine vocation.

5. In the fifth place, he should in true sense be a Christian, as he has the greatest opportunity of any professional man to win souls, for he oftentimes finds the individual, to whom he ministers, slipping, as it were, over the brink of eternity, and is grabbing at any and every thing that might keep him from falling.

The Doctor, who after he has used his best judgment in his diagnosis and then used the best remedies for the disease, he can then kneel down and pray the Heavenly Father's blessings on the means used and then for the salvation of the man's soul, if he is so unfortunate as not to be a sinner, he is the doctor that is wanted in every home, whose presence is always a blessing and a benediction to every sick room.

If it is a fact that man is *tripartite* in his nature and the body is the lowest part of his being, that which will sooner or later go to dust, it seems to me that the physician of the body should especially be that of the soul, and make the treatment of the body, as the medical missionaries do, a means of reaching the souls of men. For here is your reward and which shall be your crown of rejoicing throughout the changeless ages of eternity. So do not neglect your opportunity but take advantage of it for we are sure your responsibility is great. No doubt you have stood by the dying bed of many a sinner and watched him breathe out his last breath and you have wondered about the soul of the man, whether it was going and of its nature and condition; when, if you had spoken to him about his soul and of its infinite value and of the necessity of its salvation, and then followed it up with your prayers, as you administered the medicine, the whole scene might have been different; he might have died rejoicing in a Saviour's love. Will you be guiltless in the day of all days, the day for which all other days are, and into which the interest of all

other days will be crowded from the first day that dawned upon man's Eden home until the last day shall pass away? Me thinks not unless you have done your best. He that knoweth to do his Master's will and doeth it not the same shall be beaten with many stripes. You stand above those men of average intelligence, therefore your responsibility is the greater.

So make your profession, which is a high and holy calling a means to win men not to yourselves, but to Christ, for this will pay you a dividend in eternity. Why should the physician give all of his valuable time to the house to the neglect of the soul, the inmate of the house, which has an eternal existence. Old Cato the heathen philosopher, soliquizing on the immortality of the soul, says: "The soul secure in its existence, smiles at the drawn dagger and defies its point, the stars shall fade away, the sun himself grow dim with age and all nature sink into years, but thou, soul, shall flourish in immortal youth, unharmed amidst the wars of elements, wrecks of matter and the crush of worlds." Thus the heathen philosophers believed in the immortality of the soul and had some conception of its infinite value. The soul then having an eternal existence, why not give it more attention? We believe no one has a better opportunity to do this than the doctor, for he gets into the homes and hearts of the people as no one else. He is there with tender hands at our birth, with his medical aid in our childhood and youth and forsakes us not in old age, often times bringing us back to health after months of lingering illness, and after our friends and loved ones had despaired of all hope of our recovery. Thus we owe you a debt of gratitude for what you are and for what you have done for suffering humanity, for your unselfish and untiring efforts in relieving the poor as well as the rich from all their ailments. Yes, we would be ingrates indeed, if we did not give you a place not only in our homes but in our hearts.

There is no one we regard more highly than our family physician, and there is no one that we are more loath to leave when we are forced to change our place of residence, than he. It is always with deepest regret we have to say goodbye to him who has been with us in sickness and in sorrow and sometimes in death, ministering to all, many times without charges, if not altogether. We often feel if we could take him along all would be well.

The medical profession is a high profession, a dignified profession, therefore those entering into it should be unselfish, sympathetic, kind and religious.

THE HOUSE FLY—BREEDING HABITS, TRANSMISSION OF DISEASE BY, EXTERMINATION OF.

By KLINE V. MENEFEE, Cincinnati, O.

The writer shall endeavor to discuss the subject assigned as in the order above and while frequent mention and reference may be made of other species such as Lesser house-fly (*Fannia Canicularis*) and stable-fly (*Stomoxys calcitrans*) the greater part of this paper shall be confined to the *Musca Domestica* since this specimen constitutes 98.8 per cent of the house flies as found by Howard and other eminent workers in this field.

To ascertain the age of the fly takes us back to Biblical days and from that date on we find the fly in Grecian literature and thence to the present time when the fly seems to be found in all countries in the world and lives in any climate adapted to man.

Structure.—In order to understand the breeding habits and transmission of disease by, we must become acquainted with the anatomy or structure of the fly; and, while space will not permit detailed discussion here, we shall start by saying the fly, unlike most insects, has one pair of wings and on this account is included in large family known as diptera or two-winged flies. The hind pair of wings are the undeveloped ones seen as drum-sticked appendages known as balancers, since some think they are concerned in maintenance of equilibrium.

The parts of the fly are: head, thorax and abdomen. The greater portion of the hemispherical head is occupied by pair of large compound eyes, each being composed of about 4000 faceted individual eyes which together form a single somewhat blurred image and not thousand of separate images. Between the compound eyes and near the top of the head is a triangular arrangement of three simple eyes, the upper two are much further apart in female than in male, thus serving to easily differentiate the sexes. Vision is not especially accurate although the range of vision is wide. The sense of smell is highly developed, however, and is represented by long hairs fringing on oral lobes.

The proboscis protruding from the under and back part of the head is most interesting part of the fly. The proboscis is seen folded against the head when the fly is at rest but upon alighting, it is protruded by the mechanical action of the air sacs, the air sacs expanding and forcing blood into proboscis which is then protruded. Two oral lobes or projections cap the proboscis forming an opening leading into the mouth. Here we see

the penetration of the skin by the proboscis prevented by the oral lobe which proves to us that the house-fly is not a biting fly this being one of the most common mistakes of the public, that is to assign biting powers to the house-fly. The flies which we encounter in our routine of life which bite us are evidently the first cousin of the house-fly or the stable-fly (*Stomoxys Calcitrans*) or some other biting species. Grooved channels are found on the inner and under side of these oral lobes, these channels leading into the mouth. When these channels are placed in contact with liquid food it is sucked up by means of the pharyngeal pump to the esophagus thence through narrow neck into thorax.

If food is solid it is dissolved by means of saliva which is secreted by two salivary glands. The esophagus passes through cerebral ganglia or brain of fly into thorax by way of a narrow neck. After entering thorax it opens into proventriculus but before doing so gives off a duct on the under side which leads into the crop situated on front end of the abdomen and on the ventral side. The proventriculus leads into ventriculus or chyle stomach, which joins the coiled tubes of intestine, the latter being joined by malpighian tubes or coils of yellowish whitish tubes to which we assign the excretory function. The intestine opens into the rectum which has two conical glands in it thought to extract waste substances from the blood to be excreted in rectum, the rectum in turn continued into external opening or anus.

The respiratory system occupies more space in the body of the fly than any other set of organs. Consists of spiracles or breathing pores situated on the sides of the body, air sacs and air tubes or trachea. Pair of spiracles are situated over base of first pair of legs, these spiracles supplying air to the air sacs in head, to air sacs in thorax which give off trachea to muscles and legs, and two large air sacs which occupy almost all of whole front end of abdomen and give off trachea to viscera. Above and behind bases of last pair of legs is another pair of spiracles which supply air to the large muscles of the thorax in that region. In the male there are seven pairs of abdominal spiracles but in the female there are only five pairs, these spiracles communicating with trachea which ramify through intestinal organs of abdomen. The blood system is simple. Body cavity forms a blood cavity so that all organs, muscles, etc., are bathed by the blood fluid which is colorless and contains fatty corpuscles. A muscular tube or heart lies just under dorsal side of abdomen extending from posterior to anterior end of abdomen having four sucking chambers so to speak, or chambers which have a

pair of openings into which blood is sucked from pericardial cavity.

Heart continued as dorsal vessel along chyle stomach and terminates in mass of cells behind proventriculus. Associated with heart is a fat body and trachea and its thought to store up products of digestion which it obtains from blood.

Abdomen of female when dissected during summer months shows it to be filled with white cylindrical eggs packed together like cigars in two large bundles; these bundles which are the enlarged ovaries contain about seventy strings of eggs in various stages of development and the ovaries open into ducts which join together to form a central duct opening into telescopic ovipositor; the latter being composed of last four segments of abdomen which can be retracted entirely within abdomen.

When the fly lays its eggs and the ovipositor is extended it is as long as the abdomen. The ovipositor of the female can be extended by compression of abdomen with fingers. By means of ovipositor the eggs may be deposited in crevices of substance chosen as the nidus for larvae. Connected with this central oviduct are certain glands and a set of three small black vesicles which store the spermatozoa received from male during coitus. The internal reproductive organs of the male consist of a pair of small brown pear-shaped testicles (testes) which open by fine ducts into a common ejaculatory duct. The external organs of male consist of a chitinous penis and accessory plates.

Three pairs of legs present in common house-fly and, another feature omitted, is, the wings of the flies have veins coursing in them, their manner of distribution characterizing different species.

Breeding Habits.—The breeding season varies with the climate, beginning earlier in the South than in the North but normally they commence to breed during latter part of May and first part of June and continue to October, the greatest activity in this respect being in hot months of August and September.

The breeding places of flies are in filth, the favorite medium being horse manure; but decaying vegetables, fermenting kitchen refuse, human excreta, and putrefying animal matter offer sites which are well adapted to conditions necessary for propagation. The barn manure pile may be the place of origin of thousands of flies, the unscreened and unprotected privy serves an excellent nidus for their growth while fermenting food-stuffs and other waste products scattered about the yard may assist in their propagation. Three conditions are necessary for fly propagation: namely, proper temperature, moisture and a food supply. These conditions are nicely ful-

filled by the warm manure pile, the decaying and fermenting garbage heap, human excreta and other sources mentioned.

There are four stages in the developmental cycle namely, the egg, then larvae or maggot period, next the pupa, chrysalis or resting stage and finally the adult stage. For a proper appreciation of the role flies play in disease transmission, a thorough understanding of each of these stages is essential.

The eggs of the common house-fly are smooth, white, glistening bodies about a twentieth of an inch in length, oval in shape and slightly broader at one extremity than the other. Generally found in irregularly massed batches, each female depositing several batches during her life-time, usually 4 in number of 120 eggs each. The long ovipositor enables the female to deposit eggs in crevices or beneath the surface of filth where the desiccating action of the atmosphere is less pronounced. Ordinarily a period of eight to twelve hours is required from time the eggs are deposited until they are transformed into larvae although if temperature is not favorable, more time may be necessary. Hatching merely consists of the splitting of one extremity of the egg sac and the emerging of larvae.

The larvae, or maggots, as they are commonly known, represents the second stage in development of the fly. They are, when full grown, about 12 m.m. (1-2 in.) in length; of creamy and whitish color and much the shape of the egg, the body being somewhat indistinctly segmented. There are no legs; nevertheless by aid of mouth parts and rudimentary enlargements on the under surface of the body the larvae are actually motile and may travel a considerable distance. During course of their growth they pass through two moults, constantly feeding upon substance in which they are contained, the hatching of larvae to first moult occupying one day; from first to second moult, one day; from second moult to pupation, three days; thus maturity of larva stage from time of deposition of egg is from five to six days.

A tendency being exhibited by the larvae to congregate in a zone just beneath the surface of the mass upon which they are developing, seldom being found upon the surface. After arriving at maturity they migrate or leave the substance where they commenced their growth, burrowing into soil or even traveling a distance of several feet over the ground. This migration must be considered and guarded against when fly eradication measures are instituted.

The third or chrysalis stage of development of the fly is known as pupa. This period is characterized by a contraction of the body, a change to a darker color, and a disintegration of the larval parts, with a corresponding

growth of the wings and other structures of the fly. The pupae stage continues ordinarily for about three days when the adult and fully grown fly emerges from the sac. After exposure for a short time the integument hardens, the wings dry and the insect is ready for flight.

Under average conditions the entire cycle of development from egg to adult fly is eight to ten days—unfavorable weather conditions, etc., prolonging length of cycle. Four to ten days after the adult stage is reached the fly is sexually mature and four days after maturing they are able to deposit eggs. From the above we see that if the progeny of a single pair of flies, assuming that they all lived, were pressed together at the end of the summer they would number over billions; in fact, to trillions, and occupy a space of about a quarter of million cubic feet or 250,000 cu. feet.

There is still a popular idea that the house-flies grow, a fallacy due to the confusion of this species, *Musca Domestica*, with Lesser house-fly, *Fannia Canicularis*, the latter being small and wrongly considered the young house-fly. The perfect insect is incapable of growth; all the growth taking place during larvae or maggot stage.

Transmission of Diseases by Fly.—Before going into the transmission of disease by the house-fly, let us ask, what are some of its habits? What becomes of the fly in winter? Most of them die; the remainder hibernate. The life of the fly is not of long duration; as Hewitt and Griffith have shown, their period of life ranging from seven to sixteen weeks. The flies which hibernate to the crevices of wall paper and remain till warm days of spring when they come out to continue a propagation of their race. Occasionally in the winter they revive to some extent and come out but in a kind of stupor—some, however, persist in warm kitchens in winter.

Another question asked is, How far do flies travel? Experiments carried out by Arnold, Hewitt and Smith showed the distance a fly could travel to vary since there were several factors to be considered as the nature of locality whether urban or rural; meteorological conditions, such as wind and rain, altitude of fly and so forth. They probably seldom travel more than half a mile from their breeding place unless carried by the winds and usually remain within 200 or 300 yards of their point of origin.

After the adult fly begins its career we find it to be found predominantly around filthy places such as privies, manure piles, garbage cans and refuse of all kinds, after which it visits the home of the rich man and poor man alike to alight upon his person, food and possessions.

The transmission of disease by the house-

fly which is of non-biting species is different from that of mosquitoes or tsetse fly which are of the biting type; the common house-fly's method of transferring the microorganisms, which give rise to disease, is mechanical and direct by which is meant that no developmental change of the microorganism takes place in the fly during the transference of the organisms.

Microorganisms are transferred either externally or internally by the fly from the source of infection. As a means of transference the body of the fly is most excellently adapted, being thickly clothed with hairs or setae of varying degrees of length. Its legs which come chiefly in contact with infective material upon which it walks resemble brushes and the number of bacteria carried in this manner was nicely shown in an experiment carried out by the writer in which he caught a house fly from a garbage can and allowed the fly to walk over an agar slant. After incubation at 37 C. for twenty-four hours enormous growth of various bacteria together with few moulds present.

No cleaning of flies' legs can remove these organisms once they have been defiled, with the result that they contaminate whatever substance they subsequently visit, within certain length of time.

In feeding on infected matter, as flies are accustomed to do, whether it is excreta infected with typhoid bacilli, cholera spirilla, tubercular sputum, or purulent discharge, the micro-organisms are taken into the gut of the fly where they are able to remain a greater length of time than if they were on the body or appendages. From the gut of the fly, the organisms may reach our food in either of two ways; namely, by defecation and by regurgitation or vomit spots, experiments by Graham Smith showing the fly to defecate 3 to 11 times per hour, to vomit 6 to 16 times per hour depending on food and temperature. In both cases the fecal spots or vomit may contain a certain number of microorganisms. Since time will not permit a detailed discussion of transmission in all diseases let us mention some of the diseases in which the fly is instrumental in transmitting and discuss one of them.

Of the diseases which we may mention are: Typhoid, diarrhoea, enteritis, cholera, dysentery, para-typhoid, anthrax, intestinal parasitic infection and others.

Let us consider typhoid fever which played so fateful role during the Spanish-American War in 1898 and from which 14,000 people died in the United States in 1914.

Typhoid is an intestinal disease and caused by the entrance of the typhoid bacilli (*bacillus typhosus*) into the digestive system by way of food or drink; or, stated in another

form, contracted only by taking into the system the bacteria of discharges of one actually ill of the infection or some person who is a carrier thereof. A person may be distributing the typhoid bacilli excreted for ten or more days before being laid low by the disease; during its course; but, worst of all, is the fact that a person apparently well may distribute typhoid bacilli in his discharges for months and even years after recovery from illness; hence, the dissemination of the disease by flies feeding on the excreta of the well typhoid carrier is of grave importance.

We have been considering circumstantial or epidemiological evidence. No, let us clinch the argument with bacteriological evidence, the result of exact experiment. These experiments show the fly is able to carry the bacilli externally or internally. The typhoid bacillus is a non-spore bearing bacillus which means it is less adapted to external transference than a spore bearing bacillus as the anthrax bacillus. On this account it is not improbable that the more usual method of infection is from alimentary tract of fly either by regurgitated vomit or by faecal spots as the bacilli will persist for greater length of time in the alimentary tract than on the body or appendages.

Flicker recovered the typhoid bacillus from flies 23 days after they had been infected by feeding on typhoid infected matter. Graham Smith has shown the bacillus may remain alive in intestine of fly for 6 days after feeding and that flies may infect surfaces upon which they feed for at least 18 hours after infection.

Milk and syrups have been infected by the feeding and walking upon of infected flies. In Chicago, Hamilton recovered the bacillus five times in eighteen experiments from flies in two undrained privies.

Faichne reared maggots in typhoid infected feces and after necessary precautions with regard to sterilization showed the adult flies which developed from these maggots to contain virulent typhoid bacilli in their intestines.

Diarrhoea and dysentery and many other diseases could occupy several pages but we must pass on—the anthrax bacilli being other bacteria found on legs of flies and in digestive tract after feeding on the carcass of a cow which had died of anthrax.

Cholera is another disease in which the fly plays an important role, doing so in same manner as typhoid.

Hoffman, Graham Smith and others have found tubercle bacilli in the crop of flies in fecal matter, and on the body of flies which have fed on tubercular sputum of tubercular patients and in like manner the fly is shown

to carry and disseminate many other micro-organisms.

The depositing of larvae upon decaying food, which afterwards eaten will result in myasis or diseased condition of intestinal and urinary tracts. Flies feeding upon material containing tape worms devour the eggs, carry them in their intestine, deposit them on food which when eaten will develop in the intestinal tract of man. Like wise, hook-worm may be conveyed by this insect, the fly.

Since the tse-tse fly, which by inoculation when biting causes sleeping sickness or trypanosomiasis, is not included under the heading of house-fly," we will pass over it.

In addition to *musca domestica* there are found with it the blue bottle fly or blow-fly, known by its buzzing and similar to house-fly differing mainly in fact that it is found chiefly on fresh decaying meat and like all other members of the fly family its duty is to disseminate disease.

Extermination of.—Before taking up extermination of the fly let us consider the natural enemies of the flies and the diseases from which they suffer.

Among their enemies to be mentioned are lizards, toads, spiders, certain species of wasps and robber flies, all of which devour flies when they approach them. Naturally, however, the combined effect of all these enemies upon the total fly population is almost negligible. The enemies of the larvae are, however, much more successful in their inroads. First place should, of course, be given to birds, which eagerly devour both the larvae and adult forms. The scratching barn-yard fowl is a worthy enemy and certain forms of beetles and ants also feed eagerly on both larvae and pupae of all varieties. On a whole the natural enemies of both the larvae and adult forms fail to effect an appreciable reduction in the fly population.

The diseases of the fly family are seemingly much more deadly. There are a number of parasites which are probably annoying to their hosts but not especially destructive and attach themselves to flies for migratory purposes.

Adult flies are subject to one disease which makes serious inroads upon insect population. The dead house flies we see attached to the ceilings and furniture are found on close inspection to have whitish discoloration upon abdomen or entire body of fly may be disintegrated. The white material is the remains of a fungus known as house-fly fungus or *empusa muscae*.

The disease is prevalent from August to October and accounts in large part for the great reduction in number of flies during the latter part of the season.

To rid a community of flies is to institute a campaign for that purpose. Fly-swatting is not to be condemned but on the contrary to be commended but as in diagnosis of a patient we want to remove the cause or source of the disease, likewise we must remove the cause or source of flies. One of the first steps in this direction is cleanliness or remove source of filth, thus removing their breeding places. If the breeding place must exist such as manure pile let us see that this is removed every four days, or kept in closed bin, or sprinkle powdered borax, or chloride of lime on it—or some other chemical product with the idea of destroying both the eggs and larvae developed. Objections to the use of these chemicals is met by the fact that they are injurious to soils when the manure is used for fertilizing purposes. Kerosene formerly used is decidedly injurious to manure and soil. The Department of Agriculture estimates that one pound of borax may be used to every 16 cubic feet of manure and that if not more than 15 tons of treated material is applied to the acre no damage will result.

The removal of the manure every four days is especially recommended since the egg to larvae stage occupies this period.

The same which applies to manure applies to all forms of filth, such as organic refuse, garbage cans, etc.

The rural privy is one of the greatest menaces to the health of a community and while many types of sanitary privies are designed, a copy of which any state board of health will furnish, all should be so screened as to prevent the ingress of flies. As to the home: since we have seen the fly feeding upon the excreta of the typhoid, upon contents of cuspidor and then come into our dining room to deposit his fecal matter and vomit on our food and by this manner disseminating disease we should not have to be told to remove anything conducive to his development; but, on the contrary to remove all these breeding places, screen our doors and windows, swat him should he find his way in, utilize fly traps, and in so doing promote the comfort, happiness, prosperity, and last, but not least, the most coveted of all, health.

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MEDICAL ETHICS.*

By J. H. S. MORRISON, Cumberland Gap, Tennessee.

It is sadly true that those qualities most emphasized and enlarged upon by many are those foreign to their natures and least in evidence in their actions. The biggest coward is usually an insufferable braggart; the champion liar of the community is scrupulously jealous of his feigned honesty and veracity; and it is likewise sadly true that those doctors that fulminate at length on "Medical Ethics" are those that violate its rules in season and out of season; they use their violent protestations along that line as a cloak to hide their unethical practices. One possessing ethical qualities along any line permits the world to discover them by his actions—not by his words. "By their acts you shall know them" is as good Gospel for the physician as for the religionist.

A friend of mine—not a doctor—holds to the theory, interesting, though he may be mistaken, that Medical Ethics is a theme taught by the older doctors and practiced only by the idealistic young. In the main, I think this statement is untrue, but I must confess that some of the Gamaliels, at whose feet some of us have sat, have lent color to the charge.

What is ethics? I consult Webster, and find that it is "the science of the ideal human character;" or "the science of moral duty." Then an ethical man is one that has developed in him, to a high degree, a strong moral character; and who, as a consequence of that, has a heart delicately sensitive to duty. This definition holds true with the physician as with others. Some of us are too apt to think that medical ethics is observed, if advertising is eliminated; and if one doctor does not "butt in" on another's case. But medical ethics doesn't stop there. Some of the most unethical doctors are those that observe these rules most scrupulously. The practice of medical ethics is twofold; first, it concerns itself with the relation of the individual physician with the rest of the medical profession; and second, his relationship with his patients and society in general. The first branch needs no discussion, but the other may. A doctor holds a unique and sacred place in the community. To him people come with their physical ailments. They seek him in trust and confidence. They have a right to be treated squarely; and a doctor that fails to meet them in that manner is unworthy of the high calling that is his. I mean this: A doctor should give each patient, though he may be a charity patient, the best that he has in him. He should not take advantage of the confidence of that patient to enlarge his bills

*Read before the Bell County Medical Society.

or to become a medical pensioner. Such men have done the profession immeasurably more harm than all the advertising quacks in the world. Deliver me from the wise appearing and serious minded charlatan that looks mysterious and talks in sepulchral tones to a patient when he ought to say—"There is nothing the matter with you; drink more water and take more exercise, and get out of here!" That pussy-footing type of a physician, who fattens on the credulity of nervous women, and who calls every touch of fever, typhoid; every severe cold, pneumonia; every "belly-ache," cancer; and wants to operate in season and out of season for appendicitis, is the one that calls down upon the heads of reputable doctors the wrath of a long suffering and "buncoed" public.

There is another type of unethical doctor that needs attention: It is the posing kind. Because he lacks gray matter in his brain, he attempts to conceal that deficiency by a Van Dyke beard—like Sampson of old, he recognizes that *his strength is in his hair*. Now, brothers, I am not inveighing against whiskers in general, but you get my point.

Or perhaps he may have an inclination for striking eye glasses and ministerial wearing apparel. Again, he may be of that boorish type that insists upon talking "shop" at all times, giving substance to the philosophy of Pope that "a little learning is a dangerous thing."

When measured by our original definition, that "Ethics is the science of ideal human character," none of these types can be accepted, for they are endeavoring to gain recognition, not by merit but by sham.

I love the medical profession. I love doctors, for theirs is a calling than which none is greater or more sacred. I like to think of Jesus as the "Great Physician," and not the least of his Gospel was to heal the sick, unstopped deaf ears, straighten maimed bodies and speak peace to troubled minds. In our imperfect and restricted manner, we are called to do the same. 'Tis true that our profession is our livelihood, but we must not, we cannot, stoop to do a dishonorable or unethical thing, either with patient or associate physician, when our sphere of activity is the vale of human frailty and suffering. The greatest doctors are those whose primary aim is not to accumulate a fortune, but rather that of a sublime ecstasie of splendid spirits, who get their greatest joy in alleviating the suffering of those who come trustfully to them. Their treasure is stored in the imperishable vaults of a thousand grateful hearts; and the joy that comes to them will give a warmer glow to their hearts and a sweeter solace to their conscience than stocks and bonds or the wealth of many lands.

WHAT NEXT?

By E. J. BROWN, Stanford.

For the past two decades we have observed the rings and changes in surgery, between the diaphragm on the north and the pelvis on the south, and they have been many and interesting in the superlative degree. Since 1867 when Willard Parker opened four so-called typhilitis abscesses, afterward called appendicitis by Fitz, every pain, ache, or abdominal discomfort has been called appendicitis. About 1891 the surgeons took it away from the medical men, and ever since, the time and method of operation have been discussed. The ways to deal with the stump are many. The interval operation, the starvation, coldstorage "Osehner" treatment had its followers. The early diagnosis and early operation had lowest mortality and fewest complications. The cases that unfortunately go on to gangrene and suppuration, that have the coffer-dam drainage, Price-Kennedy method, show splendid results. It would take a volume to go into detail of each operation on the various organs, so we will merely refer to them so you may think over the many ways you have seen the various operations done in the clinics you have attended. As to the surgery of the appendix, there is less censure for a wrong diagnosis and its removal than any other operation, as the vicious little miscreant is ever ready to give trouble. The only special censure is to overlook some other serious pathological condition.

In 1809, Ephriam McDowell did the first ovariectomy, and since that time many thousand poor women have been unsexed. About 1898 the ovary cauterizing began in earnest. Mothers were deprived of bearing fair daughters and brave sons, to answer to their country's call, in order that enthusiastic surgeons might make statistics. The majority of men we have seen remove healthy ovaries, would not attack a life destroying pus-tube unless it was to puncture it through the vagina. We will dismiss this unpleasant subject as it tends to decimate the race. You have all seen this done many times in the so-called big clinics.

The uterus comes in for its share of ill treatment. We will not burden you by enumerating the various methods of removal for its many diseases, but only commend them and each one the method which to him is most successful. Curettage of the uterus has been one of the most abused procedures. Pelvic infections have been lighted up, protective walls broken down, and bonfires started from latent conditions. Curettage of the parturient woman has been the cause of incalculable harm. Murphy taught us the dangers of the sharp

curette. The treatment of displaced uteri would fill volumes. It has been hung in effigy, and suspended for misconduct. The interference with pregnancy has relegated these operation to the non-child-bearing class. The round-ligament operations have been many and disappointing. All sorts of stunts have been played with the ligaments as the kitten with a mouse, and possibly the Gilliam and the plication of the broad ligament are the most popular. Baldy and Webster both made a backward run and had a head-on collision behind the uterus. Pfannenstiel of Kiel has taught us that displacements of the uterus is not a surgical condition, unless complicated. The most common cause of complications are gonorrhoea, abortions, and meddling unnecessary surgery. In the maid or the married with or without the painful spasmodic period, the knee-chest position, hot douches and regular habits with a pessary properly fitted to the individual case, will relieve the great majority of the cases that fall into the hands of the general practitioner. The complicated cases are purely surgical and should have treatment as such. The treatment of the many conditions after the menopause is less conservative, and in some extreme cases of prolapse and retro-deviations, it is justifiable to fold them up and put them away by doing a "Werthien-Schaut" or "Watkins" operation. We will not take space for hysterectomies, but say the hysterectomy for placenta previa, contracted pelvis, or disease of the lower segment of the uterus, is one of the most conservative and least abused of any surgical procedure that we know.

Surgery of the gall-bladder and ducts has been a great boon to humanity by restoring health and saving lives. The abuse has not been carried to extremes by unnecessary operations, but possibly by doing the too radical operation—cholecystectomy instead of cholecystotomy, has opened up another field—surgery of the pancreas. In malignancy, or possibly in some marked advanced inflammatory conditions, such as when the gall-bladder is gangrenous or phlegmonous, it is justifiable to do cholecystectomy. Kennedy, with his large and varied experience, says that when properly drained the majority of the inflammatory type recover to that degree to functionate.

Surgery of the pancreas, for acute, suppurative, or gangrenous conditions most generally of hemorrhagic origin, is not showing very excellent results because frequently by the time the diagnosis is made the patient is in bad condition for surgery. Gall-stone diseases, traumatism, alcohol, and syphilis are the most common causes of these conditions. The surgeon is justifiable in operating although the patient is depressed because the mortal-

ity is very high without surgery. There are many causes of chronic pancreatitis enumerated by writers although few suggest cholecystectomy as a cause. Whether it is chemical, mechanical, or otherwise it does it all the same. Deaver teaches us how the common duct is the crucial point of the biliary system, and the distal end is buried in the pancreas, the proximity of the duct of Wirsung makes it all very possible and probable. The constant irritation makes it very vulnerable to malignancy. To Opis, Fitz, Mayo, Robinson, Moynihan and Murphy, the profession is greatly indebted in these lines.

The stomach has come in for its pro rata of surgery. Besides operations for traumatism or ptosis, ulcer with its complication has given the over-enthusiastic a fine field for his exploitations. Ulcer of the stomach is a medical disease and treated after the method of Sippy of Chicago, the great majority of cases will do well. The complications of gastric ulcer are surgical and should not be trusted to nature any more than a perforation in typhoid. Stenosis, uncontrollable hemorrhage and malignancy at seat of ulcer demand surgery. The same applies to ulcer of the duodenum. Mr. Moynihan of Leeds, is the most artful man we have seen doing work in this field and he says that, after perforation, some cases have recovered without operation. But these were moribund cases and could not have surgery. Gastro and enteroptosis have opened another field in the past five years.

Mr. Lane of England, has called attention to an angulation of the intestine, called Lane's Kink. Since 1894, Dr. Joseph Price called attention to the same condition and would hold his big ram up at right angles to illustrate his point, advising the operator to run the first eighteen inches of the ileum. It was for pathological conditions, producing adhesions such as from inflammatory suppurative lesions or incomplete surgery, that he advised this procedure. Would not the patient be better off in many of these functional angulations and kinks were they taught to wear proper clothing, to eat proper diet, and to have regular habits than to be submitted to abdominal surgery, with a slight risk of low mortality, and every one liable to post-operative adhesions or mechanical ileus?

Of the many operations unmentioned, we will refer to only one more, and that is the surgery of the kidney. For pyogenic infections, tuberculosis and neoplasms, stone surgery has played a good part. Nephrotomy and nephrectomy are sane operations. Decapsulation for nephritis has fallen into disrepute.

We will omit any further mention of operations that have become popular in our memory and speak of anesthetics and avoidance

of shock in abdominal work. We have seen most every devise for producing anesthesia—spinal, local infiltration, “twilight sleep,” gas-oxygen combinations and squirting novocaine and quinine urea solutions into the structures to block the nerve filaments “anoci-association.” Any and all of them are poor substitutes for a real anesthetic, besides having fatalities to their credit. Stovaine-spinal anesthesia is one to avoid as it is dangerous and without control. As to blocking the nerve centers, go to the fountain head. Give small dose of morphine with atropine one hour before operation and you do away with some of the psychical shock and improve the powers to lessen surgical shock. The combination prevents excess of secretion in bronchial tubes and frequently lessens post-operative nausea. We have observed the results of many hundred anesthetics in the Price-Kennedy Hospital and we have never seen a cyanosed patient leave the operating room, or but very few who could not greet you with a smile when you entered their room next morning. The cases were all operated for pathological conditions or incomplete surgery done in other clinics. Many patients are moribund from sepsis or bowel obstruction. The method in this clinic is simple and not technical but cautious—the drop method of ether on few thicknesses of gauze and the most perfect method of anesthesia we have ever seen. But remember this method has a technique that must be acquired. We have seen patients go from one clinic to another, having this man do one thing and another something else, believing they had formed the operation habit. Now we know that every time the abdomen is opened the patient has “potential” adhesions so that accounts for their complaint. Operating for conditions that are not pathological: functional surgery. Fowler position, absorbable culture material, injecting fluids into the tissues “anoci-association,” rough handling and traction on sensitive viscera, bunglesome instruments have all contributed to opening up new fields for surgery. As we have said these are a few of the many things we have observed in the so-called “big clinics.” We have not visited the surgical vaudeville at Battle Creek or Rochester, but we understand the stage settings are gorgeous. The removal of the stomach or kidney, perhaps, will only be suggestive to some one to resect the Peyer’s gland-bearing area of the intestine as early treatment or preventive measure for typhoid fever. What next?

MEDICINE VERSUS SURGERY.*

By C. W. McCOLLUM, Erlanger.

The title of this paper might indicate that we are going to have a debate but our purpose is to so present the subject, that we as medical men may get a higher conception of our privileges and duties as doctors. Also through you to impress somewhat on the public the importance, benefit and necessity of having a real live up to date doctor in the community for the welfare of its people.

When we look at the wonderful strides made in surgery made possible by the discovery of ether and chloroform anesthesia and the modern methods of asepsis and antisepsis we are not surprised that surgery and the surgeon have been very much in the minds of the people.

Since the days of that ancient operation when God took a rib from Adam’s side and made woman, the history of surgery presents many and varied steps of progress down through the ages, until at the present time it has reached a degree of perfection almost undreamed of hitherto.

The surgeon in past ages dared not open the various cavities of the body, since the days of our own renowned and revered pioneer, Dr. Ephriam McDowell, gave to the world the operation of ovariectomy, which rendered not only his own name but that of his patient, Mrs. Crawford, immortal.

The surgeon has learned to explore every nook and cavity of the body, not excepting the most vital such as the heart and the ventricles of the brain. Since that time through the discovery by Pasteur of the germ as the causative agency of disease and its application in aseptic and antiseptic methods by Lord Lister, surgery has developed along scientific lines. With these men as teachers, and such men as Dane and Moynihan of the old world and the Mayos, Crile, Murphy, Bloodgood, Carroll and others of our own land, aided by the X-rays, the laboratory and other methods and instruments of precision, the surgeon of today, successfully does much of plastic and constructive surgery, such as straightening the crooked and deformed bones; skin grafting, thus avoiding many unsightly scars, removal of growths, making what otherwise would be a hideous and unsightly body a person so near the normal in appearance, that life is to such a one is no longer a burden, but instead that person becomes capable of activity and helpfulness in the community.

At the present time when nearly all the great nations of Europe are engaged in the mightiest and most bloody war of all history, we read daily of the great work the army sur-

*Read before the Campbell-Kenton County Medical Society.

geons are doing for the wounded soldiers and suffering humanity. The soldier who carries his gun or fights in the trenches is not braver than the surgeon whose hand is never raised except to relieve suffering. Not only do they go where "shot and shell fall thickest," ministering to the wounded, but when night comes over that bloody battlefield and the weary armies are asleep, with a flickering lantern, or by the moon's misty light, they search for a heart that yet beats, ministering alike to friend and foe.

We do not wish to detract from the honor and dignity of the surgeon, or pluck from his brow his well-earned laurels, but only to uphold and secure for the medical man such honor and rights as are his by reason of the greater services he is rendering to humanity.

The medical practitioner, and by such a term we desire to include all those who, in their daily work, use such methods of prevention and cure as are used mostly in the home, at the bedside by the family doctor.

He also, since the discovery of the germ as the causative agent in disease and aided by instruments of various sorts, has become more scientific in his methods and practice. The X-ray aids him to find early evidence of lung involvement in tuberculosis and begin treatment while there is yet hope. Also to in some instances, the stone in the kidney or gall bladder.

The microscope enables him to distinguish the particular microbe or bacillus causing the disease from which the patient is suffering and thus use a more specific treatment.

Before the discovery of germs, disease was a mystery and uncontrollable. We read in history of epidemics of disease so terrible in their ravages as to wipe out of existence the population of whole towns and communities, indeed on this account it is estimated that "during the dark ages the average of human life was less than twenty years." Gibbon, the historian says: "If a man was called upon to fix the period of the history of the world, during which the condition of the human race was most happy and prosperous, he would without hesitation, name that which elapsed from the death of Domitian to the accession of Commodus." (From 96 to 180 A. D.)

"Let us make brief inquiry into the diseases of this most happy and prosperous period. It was preceded by, it began in, continued in and closed in pestilence. That the plague was endemic in Italy at that time and that it developed in epidemic form with each increase in susceptible material there can be no doubt.

Of the epidemic of 68 A. D., Tacitus says: "Houses were filled with dead bodies and the streets with funerals, neither age nor sex were exempt; slaves and plebians were suddenly

taken off, amidst the lamentations of their wives and children, who, while they assisted the sick or mourned the dead were seized with the disease and perishing were burned on the same funeral pyre. To the knights and senators the disease was less mortal, though these also suffered in the common calamity."

About this time the plague appears to have spread over the whole of Asia, northern Africa and Europe. According to Short, the deaths from this disease alone in Scotland between 88 and 92 A. D., amounted to not less than 150,000. This was probably one-fourth, possibly one-half the population of Scotland at that time.

In the year 80 A. D., the deaths from the plague in Rome at the height of the epidemic numbered 10,000 a day. It is estimated that the population of Rome at that time was somewhat more than one million. Exacerbations of the disease in Rome are recorded for years in 175 and 178 A. D.

According to Short 45,000 died of the plague in Wales in 114. The year 167 A. D., is noted for an unusually severe outbreak of the plague in Rome where it continued for many years. In the year 173 A. D., the Roman army was threatened with extinction by disease, and special epidemics or rather exacerbations of the epidemic prevailed in Rome in 175 and 178 A. D.

That the "happy and prosperous" period mentioned was followed by still other plagues and epidemics is not necessary to relate.

The cause of the deadliest diseases of the past as cholera, smallpox, bubonic plague, tuberculosis and many others not so epidemic in their nature such as malaria, typhus and typhoid fever, hookworm and etc., have been discovered and the means of their spread and transmission made known.

To those who know the despair and terror caused by these uncontrolled epidemics in the past I want to say the medical man has had a large but not conspicuous part in robbing such epidemics of their power for future harm.

The work of the surgeon is an individual work. Did the removal of an appendix or a gallstone ever prevent an epidemic or contribute to the health of the family or the safety of the community? We think not.

As already said, they remove deformities and disfigurements, thus making more presentable a few individuals. But the doctor who does his duty and vaccinates his patient, prevents not only the terrible disfigurement of that person but immunizes that patient so that he is safe from smallpox himself and prevents him from becoming a source of infection; that might easily disfigure or kill scores of others.

When Jenner died, a poet and a philan-

thorapist wrote upon his tomb these beautiful appropriate lines:

"Upon this grave let beauty drop a tear
For beauty's truest, dearest friend lies here."

Does thacheotomy make the family of a patient needing such an operation safer from the disease? You know that it does not. But this is only another instance of the individual character of the surgeon's work. While, if in such a case the doctor is called early, diagnoses the disease he has to treat, he will isolate such patient from the rest of the family and give sufficient doses of antitoxin to relieve the patient and save his life thus preventing the need for a surgical operation and thereby render the rest of the family safe from further visitation of the disease and the community a possible epidemic.

Few surgical operations are of greater benefit to women than that of ovariectomy but the doctor who recognizes the case where the gonococcus is at fault and does his duty, may not only prevent such an operation, but prevent a further spread of the disease with more cases of ovariectomy, sterility and blindness in its wake.

Cancer with its awful suffering and loathsomeness has been recognized as a strictly surgical condition and its cause, unless as recently announced by Dr. Sater, of Cincinnati, not yet known. Here too, unless the doctor who in his work first sees these cases recognizes the condition and calls the surgeon, surgery can offer but little.

We might continue these illustrations, but think we have given enough for the purposes of this paper.

When the people were honoring David, they said, "Saul has slain his thousands, but David has slain his tens of thousands." Today it might be said that the surgeon has relieved or saved thousands from suffering or an early grave. The doctor has prevented or relieved his tens of thousands from such a fate.

Now, why all this preamble? A thing which is not worth asking for is not worth having. If the doctor is to occupy the place in the welfare of the public that he now does, it is because of the service he has and now is rendering. He must either when he treats a case of disease where early diagnosis and proper methods limit the disease to that single case, thereby limiting service, ask for compensation commensurate with the good he has rendered that family and community, because necessarily from the nature of the work, he can not ask for shorter hours, that he may have the necessary means for his livelihood and to keep abreast of the onward march of progress, or else he must ask the State to provide better opportunities for the young man entering the study of medicine to get his edu-

cation at less cost, and better facilities for post-graduate study and for the man already in the work to be amply paid for all charity and sanitary work done and possibly pensioned when no longer capable of further service, be further aided in building up a hospital or system by which every practitioner can give the patient not only the skill and knowledge he possesses, but have the assistance of those skilled in other lines of medicine, at such a fee as shall be reasonable to the patient and sufficient to give each doctor connected with the case a fair compensation.

In past ages medical men have been the chief torch-bearers of science, the only light in which man can safely walk and we must keep and transmit to our successors this trust and honor.

To aid us in the work made possible by the great discoveries and advancements in the progress of our profession, it should be our duty as well as our pleasure to so teach the public that in the eradication of all preventable diseases and its associated immorality and crime, all intelligent people may be enlisted, laws enacted and other necessary steps taken. In doing this the doctor can and should have a leading part.

THE INFLUENCE OF MOUTH INFECTIONS ON SYSTEMIC DISEASES.*

By J. T. GLENN, Covington.

In dealing with the peritoneal cavity surgeons know that it will stand a certain amount of injury and infection. When that limit is reached the peritoneum rebels, the bowels pass into a paralytic state and the patient dies from the absorption of toxins produced by his peritonitis. We know that ruptured gastric ulcer is much more rapidly fatal than a ruptured appendix. The lower abdominal cavity in other words is better able to take care of infection than is the upper abdominal cavity. Ruptured appendices respond to the efforts of delayed surgery more frequently than do ruptured gastric ulcers. Why? One reason is because of the richer lymphatic supply in the upper abdomen the absorption of the toxins is more rapid there than it is below. Another reason suggested by Rosenow is, that the germs causing ulcer of the stomach are more virulent than those causing appendicitis. Hence the septic peritonitis resulting from a ruptured ulcer is more virulent than that resulting from appendicitis, hence the more rapid death and the greater mortality in ruptured ulcer.

Tonsillitis, rheumatism, chorea and endocarditis are a quadruple often associated.

*Read before the Campbell-Kenton County Medical Society.

One of the first questions put by the physician to the patient with a mitral systolic bruit is, did you ever have tonsillitis or rheumatism. Why do we ask that question? Because some one has showed us the association between these diseases and we haven't forgotten it. The large majority of chorea patients likewise give a history of throat and joint troubles.

Gonorrhea, either acute urethral or chronic prostatic has a predilection for the joint surfaces. Gonorrheal peritonitis, except by extension from the Fallopian tubes and gonorrheal meningitis have never been described. Why does the gonorrhea select the joint's serous surface in preference to the peritoneal or the meningeal serous surfaces. Why, we don't know but by observation we know that such is the case.

Why does the tubercle bacillus select the serosa of the bowel in preference to the mucous membrane. Again we are forced to admit that we don't know. Why do we see ulcers of the stomach and duodenum more frequently than ulcers of the jejunum or ileum. Does the irritation of the food and Hcl in the stomach answer the question entirely? I hardly think so. If it does why do we look for the ulcer of typhoid fever within a few feet of the ileo-cecal valve. Because Peyer's patches are located within a few feet of the valve—but why does the typhoid bacillus grow more readily on Peyer's patches than it does on other granular tissues?

Even in the laboratory we know that different germs grow best or even in some cases exclusively on certain sorts of media. The Loeffler bacillus grows best on blood serum. The typhoid on agar agar, the gonococcus on hydrocele agar, the tubercle germ on dextrose agar and the anaerobes such as tetanus must be inoculated into stab culture and all oxygen excluded.

For all these things there are reasons, sometimes the reason is plain, but more frequently I think, we are forced to admit that the explanation is beyond us.

Within the last few years laboratory and research workers have been endeavoring to show us the relation between systemic infections, e.g., ulcer of stomach and pyorrhea alveolaris, or again between cholecystitis and pyorrhea. As stated before in the presence of rheumatism or endocarditis very few doctors fail to examine the tonsils, but how many of us as a matter of routine, examine the mouth to search for a possible focus of infection in gall-bladder, stomach, or appendiceal troubles.

Boulton, in England in 1900, and later Rosenow and others in this country, have succeeded by injecting various strains of streptococci into the ear of a rabbit in producing

lesions in the stomach varying from simple mucous ulcerations to ulcerations perforating through the muscularis and serosa. Other strains of streptococci likewise injected into the ear caused appendicitis; while still others produced gall-bladder infections.

In a paper entitled the Elective Localization of streptococci, Rosenow shows that the different bacteria have different points of election, e.g., in a series of 68 rabbits injected with streptococci from a case of appendicitis 68 per cent. of the rabbits showed lesions of appendicitis. Eighteen strains from ulcer of the stomach injected into the ears of 104 rabbits produced lesions in the stomach in 74 per cent. of the rabbits thus treated. Twelve strains from cholecystitis produced lesions in the gall-bladder in 80 per cent of 41 animals injected.

He states that different germs show different points of election, and concludes that these diseases, ulcer of stomach, cholecystitis and appendicitis, are often terminal infections from some focus far removed in the body.

The experiments of Rosenow and others seem to give the necessary experimental proof that chronic foci of infection play a most important role in causing systemic disease. A focus such as a pocket of pus in the tonsil or around a tooth socket which cannot heal for mechanical reasons and which is constantly filled with pus and necrotic material teeming with bacteria, must be regarded as a culture tube with a permeable wall affording abundant opportunity for the entrance of bacteria and their products into the system. Just how these bacteria get into the system is a mooted question. The most logical explanation is through the lymphatic or blood stream and being deposited in the terminal branches of the capillaries of the organ or part of the body affected.

So much for the laboratory and experimental work. We are shown that such things can and do happen, it is up to us to make use of this knowledge and learn how to associate abdominal and other conditions with some focus of infection and to put this knowledge into practical use. The sooner we do this the sooner will we keep our obscure abdominal conditions from becoming neurasthenics and passing into the hands of others. How often do we examine the teeth, throat, pharynx and accessory sinuses in treating an abdominal or other far-removed conditions. Isn't it the rule to prescribe for the condition, say 10 drops of Hcl in water before meals, or possibly a tonic and totally ignore the focus of the infection.

If the terminal infection follows closely upon the source of the infection for example, a septic pneumonia following an infected cut on some part of the body, then we immediately pointed to the cut as the source of in-

fection, but if the focus of infection happens to be one which the patient has harbored for months or even, in some cases, for years, then for some reason or other we fail to connect the terminal disease with its chronic focus in other words, the patient has had the chronic focus for so long and nothing has happened, the onset of the trouble is so insidious that even we, as physicians, fail to see and make the connection.

In a recent paper before the Mississippi Valley Medical Association, Dr. W. H. Haines sketches in detail a case referred to him for operation for gastric ulcer. Haines remarks that the removal of infected bridge work from the mouth and the treating of the pyorrhea together with a proper diet effected a complete cure.

Within the past six months I have had in my own practice few excuses along these same lines and it was just this that determined my writing of this paper.

I. Woman about 55 years complaining of distress in stomach, feeling of weight and misery after her meals, loss of weight, bad taste in her mouth, bad odor to the breath. She told me the last doctor she had had told her she had stomach trouble, and probably would have to be operated on. This patient had a miserable pyorrhea alveolaris, a number of loose teeth and a few old snags and stumps. A few days treatment by the dentist has fixed her stomach up fine as she says, she is gaining in weight and all her stomach misery has left her.

II. Another case, a young man of 28 years, first seen about one month ago, complaining of pain in right hypochondriac region. Had it for about sixteen months. Diagnosis gall bladder infection from infected teeth. Treatment consisted in fixing up the mouth and diet. Patient at present time improving.

III. Patient, young man 35 years of age, with pyorrhea and glossitis, tongue red and swollen with imprints of teeth along the edges. Mouth so sore he couldn't eat. Had been to doctor, who told him that the condition of his mouth was due to an upset stomach. He stated that this other doctor had had him through several of these spells and always cured him but this time he seemed to be getting worse.

This case likewise was referred to the dentist for treatment and excellent results were obtained.

IV. Patient, 9 years of age, taken gradually sick with nausea and vomiting, temperature 101-103, rapid pulse, no diagnosis made until fifth day when chest began to get dull on one side and diagnosis of primary pleural effusion, probably empyema made. Exploratory

needle confirmed diagnosis. Patient operated. Recovery complete.

This child had the worst set of teeth I have ever seen in a youngster. Every tooth in his head was decayed and there were pockets of pus (gum boils) around several of the teeth. This lad's infection, to my way of looking at things, came through his teeth.

I have several other cases in mind, where fixing the teeth cured the condition. Now in explanation of these cases I have just recited, I am not taking the stand that all troubles come from infected teeth. Nor do I believe that where an old pyorrhea going on for years has caused severe functional or organic changes in a part that all the results will be as brilliant as the few cases I have just recited. No that is not my idea at all. The point I am trying to make is this, that no examination is complete without an examination of the mouth as the possible source of infection. I have said nothing about the tonsils, pharynx, etc., because as stated before, we are accustomed to look to these parts because that was drilled into us at school. The newer idea of pyorrhea as a source of infection I don't think we have completely fallen for as yet.

In looking over the insurance examination blanks of three of the largest old line companies in the country I noticed that not one word was said about the condition of the applicant's teeth.

In reciting my clinical cases I mentioned the other doctor. I do this with the greatest respect and regard for the other fellow. I have sense enough to know that patients quote other doctors incorrectly and often maliciously. It may have been so in these cases, but diplomatic questioning of these patients elicited the fact that the other doctor had not even looked in the mouth and had said nothing about having the teeth attended to.

I think it is a fact that negroes suffer from gastric ulcer, gall-bladder troubles and appendicitis much less frequently than do the whites, in fact I have often heard surgeons remark the rarity of these and allied conditions in the colored race. Personally I believe one reason why such is the case is because the teeth of the negro are as a rule immeasurably better than the teeth of the whites. Their teeth are harder, less liable to decay, and the gums are firmer and recede from the teeth less easily. I have spoken to several dentists about their colored patients and all are in accord in stating that teeth troubles are rare among the colored race and when they do occur it is found that grinding the teeth of the negro is hard work, on account of their density.

In conclusion let us learn to look upon these various affections in the body as terminal infections with some focus higher up, acute in-

fections are easily associated, chronic foci are more difficult to attain but, nevertheless, even though weeks or months may elapse remember that such infections are possible. Old foci may remain dormant for years, and then a point of least resistance presenting itself, the germs take on a new and invigorated growth and unless we are closely observant we will treat the cause and leave the effect to be searched for and treated by the other fellow.

NEWS ITEMS AND COMMENTS

Dr. William Doores, 87 years old died at his home at Crab Orchard of infirmities. He had been in active practice for half a century, retiring about four years ago. He was a Captain in the Confederate army under Gen. Price. He was wounded several times and had five horses killed under him.

After the war he settled in Madison county, coming from Madison county to Lincoln in 1897, where he has lived since.

Closing a long life of unselfish devotion to his family, his friends and his profession, Dr. John Quiney Stovall died Thursday morning, February 8 at his home in Grayson. Born September 6, 1838, he was in his 79th year. With the serene consciousness of a well-spent life and surrounded by members of his family, some of whom had come from distant places, his end was peaceful.

Danville will have a new 40,000 hospital building. This became known when the Danville Hospital Committee purchased from C. C. Bagmy his property on South Third Street, and announced that a large fire-proof building would be erected as soon as the weather permits. The old brick house that has stood on the lot for two generations will be dismantled at the earliest opportunity. Plans for the building will be ready within a short time and it is the hope of the committee that the work may be begun in the early spring. The building will be ready for occupancy next fall.

The tuberculosis hospital at Henderson is soon to be opened. It cost about \$25,000 and will accommodate fifty or sixty patients. Something like twenty wealthy citizens donated \$100 each towards furnishing the various rooms, and memorial inscriptions will be placed on the doors in honor of the donors.

Dr. J. M. Stone, prominent physician of Henderson, died February 9th of pneumonia. He was about 65 years of age.

The Warren County Medical Society met at the city hall February 14. "Diseases of the Joints" was the subject for discussion.

Dr. J. S. Locke, of Barbourville, has resigned the position he has filled for several years with the Rockefeller Association and has gone to New York City where he will take a post graduate course, when he will return to take up the practice of medicine and surgery again.

Dr. Randolph Dade, who was a general practitioner at Edgerton until last summer has concluded to specialize his work and has opened an office in Hopkinsville, as a specialist in diseases of the eye, ear, nose and throat.

Dr. Harry Fletcher Williamson, 57 years old, former city physician of Paducah, and former president of the Board of Education, died Feb. 10, after an eleven days' illness of pneumonia.

Dr. Williamson was one of Paducah's most prominent physicians and was the son of the late Captain John Elliott Williamson. Ill health forced him to give up active practice a few years ago and he had spent most of his time since that time in the county. Dr. Williamson was widely known and popular. He served two terms as city physician and was formerly a member of the school board, and at one time president of the board.

Dr. A. A. Hurt, one of the best known physicians in Graves county, died at his home at Clear Springs February 12 about 3 o'clock. He had been ill for only a few days with pneumonia when death called him. He is survived by a wife and eight children.

Dr. Hurt had many friends in Mayfield and Graves county who will regret very much to hear of his death. He was a very prominent Baptist. Revs. McNutt and Lowe had charge of the funeral services.

Dr. Thomas Hunt Stucky, 58 years old, who has long been prominent in the medical profession throughout the United States and active generally in the numerous societies for the advancement of medical research, as well as a number of local fraternal organizations, died February 18 at 9 o'clock at the Beechhurst Sanitarium of cerebral hemorrhage.

Dr. Stucky has been suffering for some time from a nervous breakdown. He had been confined to his bed for a week and was a patient at the sanitarium for eleven months.

Dr. F. H. Clarke is the new president of the Lexington Board of Health, having been unanimously elected to succeed Dr. W. O. Bullock, resigned. Dr. Clarke has for many years been connected with the health board and is the senior member in point of service.

Dr. John D. Jackson, of Danville, has been appointed by the president of the American College of Surgeons a member of the national

committee on medical preparedness. The famous surgeons representing different parts of the United States will co-operate with the American Red Cross Society in alleviating suffering in case of war.

Dr. M. L. Smiley, of Catlettsburg, died after a brief illness. He was 72 years old and was a captain in the Confederate Army. He was never married. He was a Mason and he leaves a large estate.

The Oldham County Medical Society met the first Thursday in March at 1 P. M., at the city hall in LaGrange. The subject for discussion was "Preventive Medicine and Clinical Cases," etc.

The State Committee on Red Cross Medical Service, for Kentucky, is as follows:

J. Garland Sherrill, Atherton building, Louisville; A. T. McCormack, Bowling Green; Irvin Abell, Atherton building, Louisville; David Barrow, 148 Market Street, Lexington; Frank Boyd, City National Bank Building, Paducah; John D. Jackson, Danville; Milton Board, Starks building, Louisville; Lewis S. McMurtry, Atherton building, Louisville.

How physicians, hospitals, and medical science will be brought more effectively to the service of the sick workers under universal health insurance is explained in a pamphlet just published on "Medical Organization Under Health Insurance" by Dr. Alexander Lambert, New York, Chairman of the Social Insurance Committee of the American Medical Association.

The full cooperation of physicians and public health officials all along the line, Dr. Lambert points out, is provided in the standard bill for health insurance prepared by the American Association for Labor Legislation and now before the legislatures of several states.

"In any large health insurance scheme," says Dr. Lambert, "a huge and intricate machinery is necessary and physicians are an essential part of this machinery. The service rendered by the medical profession must be on a business and not a charity basis. Sickness is an economic calamity for which the members of the community are responsible in varying degrees, and for which the whole community pays. The greatest economic asset that a workman possesses, is the health that enables him to go to work each day. If he loses that, he loses his power of earning his living."

The pamphlet covers thoroughly every aspect of the proposed system involving medical provisions, with charts to illustrate the organization of medical care. The writer invites comment and criticism that will be helpful in working out the plan in each state in justice to employers, employees, and physicians.

BOOK REVIEWS

Acute Syphilitic Meningitis.—By Boris Bronstein, M. D., Odessa, Russia.—Bronstein considers that the term acute syphilitic meningitis should be more particularly applied to acute meningeal pneumonia of the secondary period, sometimes preceding, but more frequently accompanying the cutaneous manifestations of this period. The pathology is essentially a meningovascularitis with hypersecretion of the cerebrospinal fluid. Prodromal symptoms, such as headache and insomnia, may or may not occur. Acute syphilitic meningitis at its height, as Bronstein says in the December International Clinics, presents the clinical picture of the tubercular form, differing from the latter by the indistinctness of the symptoms, such as contractures and stiffness of the neck, and by the absence of any marked disturbance of the pulse and respiration. In the leucic form fever is apt to be absent and there may be remissions and relapses. Lumbar puncture reveals a considerable hypertension of the cerebrospinal fluid, albumin in quantity, and a marked lymphocytosis with plasmoglyasts. The cerebrospinal fluid may yield a positive Wassermann even when the blood serum is negative. Other manifestations of syphilis are to be looked for. The immediate prognosis is rarely fatal but the ultimate prognosis should be reserved. Prophylactic treatment is recommended whenever the cerebrospinal fluid shows a lymphocytosis, even when all meningeal symptoms are wanting. The treatment consists in frequently repeated removal of the cerebrospinal fluid in considerable amount, combined with intravenous injection of cyanide of mercury and intraspinal injections of colloidal mercury. Neosalvarsan or salvarsan have a much more rapid action, but must be prudently handled in neurologic lesions of syphilis.

Syphilitic Alopecia.—According to Loyd Thompson, Hot Springs, Ark., (Journal A. M. A., April 22, 1916), complete syphilitic alopecia is not mentioned in most textbooks or is dismissed with the statement that it is a rare condition. In the literature he has found but two cases of complete alopecia from syphilis and therefore he feels he is justified in presenting another. The patient was a Jew, aged 23, whose hair and eyebrows began to fall out two weeks after the appearance of a chancre and, following this, the hair of other regions. In two months the body was entirely denuded. Three weeks after the chancre the mouth was sore and a rash appeared on the body. The Wassermann reaction was strongly positive. In spite of treatment the condition persisted and he was discharged from the hospital in about two months. More than a year later the condition was the same as regards the alopecia.

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ASHLAND, 1917

COUNTY SOCIETY REPORTS

Bell--The Bell County Medical Society met in annual session on the evening of December 15th, 1916, at Middlesboro, in the office of J. P. Edmunds.

The meeting was called to order by the President, C. F. Clayton, who had been elected to fill out the unexpected term of F. D. Haston, who had removed from the county.

This being the last meeting in the year, and the meeting at which officers are elected for the ensuing year, the scientific program was dispensed with, and only such business transacted as was of a pressing nature. The general plan of the work of the society, together with the annual program feature, was discussed and adopted for the ensuing year.

The Secretary made a report of the work of 1916, and with it, made an appeal for better work for 1917, which was followed by many enthusiastic expressions, and pledges for the New Year.

A resolution was passed, requiring all members to have their dues in the hands of the Secretary before the first of February, 1917, or their names would not appear on the program for the year, and the secretary was instructed to notify all members of this resolution in due time.

After the transaction of all business before the society, the election of officers was proceeded with, and the name of J. S. Lyon was put in nomination by Jacob Schultz, and, against his protest, he was elected President for the year 1917. Whereupon, Dr. Lyon expressed his gratitude to the society for the honor, but fully explained his inability to attend the meetings, and his feeling that it would not be justice to the society for him to accept the honor, after which his election was withdrawn and J. P. Edmunds duly nominated and elected as President. J. H. S. Morrison was elected Vice President, and O. P. Nuckols was again elected Secretary and Treasurer. Edward Wilson was elected to the Board of Censors for the full term of three years, and U. G. Brummett was elected to fill out the unexpired term of J. Gaines Moss of two years.

It was voted that the President and Secretary get up the program for the year 1917, allowing the President the privilege of appointing other members on the committee at his own discretion.

This concluded the regular business session of the meeting, and the retiring President invited all present to repair to the dining room of the Elks' Cafe, where a beautifully arranged, and splendidly prepared banquet awaited them. C. F. Clayton presided, both as host and toastmaster, and after the dinner was completed and cigars passed, he began the post prandial service by a few cheerful and happy remarks, following same by reading a much enjoyed poem. He introduced each speaker in a very happy style and all responded with many cheerful and appropriate remarks.

C. F. Clayton is to be congratulated upon the splendid manner in which he entertained the society and every one left in a high state of enthusiasm for the incoming year, for the success of the Bell County Medical Society.

O. P. NUCKOLS, Secretary.

Franklin—The regular meeting of the Franklin County Medical Society was held February 13. Those present were E. C. Roemele, Coleman, Patterson, Garrett, Minish, Mastin, Williams, Stewart and Mrs. Howard Farmer.

In the absence of the president, John G. South, the meeting was presided over by E. C. Roemele.

U. V. Williams read a paper on "Corpus Luteum."

Following the regular business meeting was a social session, at which Dr. Roemele was host. During this part of the program Dr. Williams further entertained those in attendance by presenting a piece of rhyme which made comments on various prominent physicians of the city. The verses, which were read by Dr. L. T. Minish, are as follows:

Carl Roemele makes a hit with me—
And on him I always gloat,
When in a "talking fest" is he,
He surely gets my goat.

It is best to clear the house of germs
From cellar, throughout, don't spare it
And none can serve a better turn
Than Dr. Neville Garrett.

We have but one lady doctor
She is not dead stuck on the job
But is looking for a rich old rooster
With plenty of beans for a booster.

Patterson is our only man
We have on the marrying list
The girls must nab him if they can
If a doctor is what they wish.

Wallace is a fine old man
A very optomistic cuss;
He's in the kindergarten class
And still he is one of us.

When a doctor wears a good self-starter,
He need not be a sport,
He tells his patients what he's arter,
And gets there like Monfort.

When South first hung his shingle out
He began his life most gladly,
But when few patients came about
He switched his chase to Bradley.

For Keller I sure think I ought
To make a best and telling rhyme;
Give him joy and earnest thought,
For he is sugar all the time.

If a dancer is the "top" you will
To waltz or tango and turkey to the finish
We have only one to fill the bill
And he's "Beau Brummel" Minnish.

It is a truth you will agree,
That Fish is surely up to date;
And when your "innards" chick-a-dee,
He can knife you while you wait.

Heilman now is a country man,
It's easy to tell you how,
He is the early bird and fills a can
By pumping a Jersey cow.

Jake Coleman has not married yet,
He set his mark so high
Than no chicken he could get
Would harken to his sigh.

When one gets old enough to know better,
And they will number by the millions;
Then they are too old to do better,
None know so well as Williams,
To live always he has not aspired
But when at a hundred he may be tired.

U. V. WILLIAMS, Secretary.

Franklin—The Franklin County Medical Society met in social session January 16, 1917, at 7 P. M., at the residence of John G. South, the retiring President; also President-elect.

Those present were: W. L. Heizer, Keller, Wallace, Minish, Garrett, Mastin, Budd, Montfort, Williams, Helm, Demaree, Heilman, J. P. Stewart, Wilson, A. E. Coleman, J. S. Coleman, Fish, Romele, Patterson, Coblin, Heizer, Dr. Josephine Hoggins and Mrs. Mary Jett Farmer and Dr. T. R. Moore.

Many of the county physicians sent regrets on account of the snow and sickness.

Minutes of the previous meeting read and completed by appointment of Drs. Williams, Montfort and Patterson, censors, and Dr. U. V. Williams, referee.

The following physicians were admitted to honorary membership: S. L. Helm, W. L. Heizer, and W. C. Cawood.

Round table talks on Pituitrin profitably discussed by all present in three minute talks.

The social element was in full swing, following the dinner so hospitably and elegantly served by the hostess, in which everyone so fully demonstrated the sentiment of the poem, "When Homeward the Swallows Fly."

The residence was most beautifully decorated with Ward roses, stevia and smilax.

A rising vote of thanks was most heartily extended Dr. South.

A benediction was pronounced in the following pseudo-poem by U. V. Williams:

The shades of night were falling fast,
As down the street the doctors passed

With eager speed and one intent
To Doctor South all were hell bent.

I wonder if that eager throng
That sped the snowy street along,
Were moved by friendship's kindly need
Or was it the expectant feed?

Sure it was not to meet a lovely lass
That made the min such hurry pass;
For each one knew his home did hold
One who asserts her rights were bold,
And would require a strict account
Of all he did when he was out.

No 'twas to meet the doctor good
In a most generous and loving mood,
And drink the toast in generous quaff
The happiness of his better half;
Half does not express her worth at all,
For to him she is all in all.

Now that this happy feast is done,
Be happy when another day is begun.
See we begin a better way,
And meet again another day.
Forgive all your enemies P. D. Quick.
Excepting those whom you can lick.

U. V. WILLIAMS, Secretary.

Henderson—The first meeting of the Henderson County Medical Society for the year 1917 was held January 8, with nine members present.

The President, Silas Griffin, presided. A letter from the State Secretary in regard to Vital statistics was read. The society voted that we give our co-operation in this work of reporting infectious cases to the State Registrar and also that we be supplied with blanks as soon as possible.

The officers elected at the previous meeting were:

President, Silas Griffin, Henderson; Vice President, A. S. Denton, Robards; Secretary, W. B. Negley, Henderson; Censor, Peyton Ligon, Henderson; Delegates, J. C. Moseley, Henderson, and W. A. Poole, Henderson; Alternate, Arch Dixon, Henderson, and J. M. Ridley, Robards.

The Henderson County Medical Society has not been what it should have been for the past year or two, however its members are taking hold in earnest and have resolved to make this year the best that the society has ever known.

Those members present were: W. V. Neel, Y. P. Jones, W. A. Poole, W. A. Quinn, Silas Griffin, Peyton Ligon, W. M. Floyd, J. B. Lampton, W. B. Negley.

G. F. Jones read a paper on "School Hygiene, Enlarged Tonsils and Adenoids."

W. M. Floyd, read a paper on "Trachoma and Other Infectious Eye Diseases."

W. B. Negley read a paper on "Co-operation of the Medical Profession."

Discussion by all members present.

WM. B. NEGLEY, Secretary.

McCracken—The McCracken County Medical Society met in the Board of Trade rooms, December 27th, 1916. The following members present: Drs. Stewart, Lynn, Acree, Willingham, Caldwell, Lackey, Shemwell, Kirkpatrick, Jackson, Blythe, and Parsons.

An election of officers for 1917, was called, the following being duly elected, J. B. Acree, President; R. B. Kirkpatrick, Vice President; W. H. Parsons, Secretary; E. W. Jackson, Treasurer; V. Blythe, Delegate; H. P. Lynn, Censor.

Reports from past secretary and treasurer received and filed. Talks on the good of the order were made by several present.

Delia Caldwell reported a case of "Occlusion of the Urethra in the New Born."

P. H. Stewart reported the technique and operation in establishing an artificial urethra, which was much appreciated by all present.

W. H. PARSONS, Secretary.

Pendleton—The Pendleton County Medical Society met at Butler, February 14, 1917. The following members were present: Drs. Beckett, Cram, Brown, Hopkins, Clarke, Kendall, John E. Wilson, J. Edwin Wilson, Blades and Eckler. Dr. Hadley Caldwell, of Cincinnati, Ohio, visiting.

This was a very profitable meeting with everybody interested and ready to enter into the discussions.

E. A. Cram read an interesting paper on "Therapeutics in Organic Heart Affection," which was freely discussed.

A number of very interesting cases were reported.

Altogether this was one of the most profitable meetings in months.

L. T. ECKLES, Secretary.

Whitley—The Whitley County Medical Society met on December 20, at the office of Dr. A. A. Richardson. The following members were present: C. G. Ellison, A. A. Richardson, L. B. Croley, W. J. Smith, L. S. Moss, C. A. Moss, L. O. Smith.

The meeting was called to order by President A. A. Richardson. Minutes of the last meeting were read and approved.

The annual election of officers was held and resulted as follows:

President, W. J. Smith, Williamsburg; Vice President, C. G. Ellison, Williamsburg; Secretary, A. A. Richardson, Williamsburg; Delegate, M. W. Steele, Corbin; Alternate, C. A. Moss, Williamsburg; Board of Censors, L. B. Croley, C. A. Moss and W. J. Smith; Program Committee, L. B. Croley, L. O. Smith, A. A. Richardson.

Motion was made and carried that the following committee, Drs. A. A. Richardson, C. A. Moss

and W. J. Smith, be appointed to draw up resolutions of appreciation of the work of the State Laboratory.

Motion made, seconded and carried on suggestion of C. A. Moss that the secretary request the State Board of Health to provide all doctors in the county with blanks for morbidity reports for communicable diseases, and that all doctors in the county make promptly and regularly morbidity reports.

C. A. Moss read extracts from editorial in the December Journal and address of Dr. Stevens on "The Future of Medicine," from the November Journal.

There being no further business the society adjourned.

C. A. MOSS, Secretary.

IN MEMORIAM

DR. B. D. COX.

Dr. Braxton D. Cox, of Campton died at his home February 7th, 1917, surrounded by his beloved, aged wife and large family after a few days' illness. It has been the pleasure of the writer to count Dr. Cox as one of his most intimate friends and true brethren for quite a number of years. He was one of the founders of the Kentucky Valley Medical Association and it was one of the pleasures of his life to attend its meetings; his presence could always be counted upon is possible for him to be there. He was peculiarly an ideal mountain physician; having been born among the craggs and snags of the roughest imaginable country he could not be torn from it under any circumstances; he served his people well, attending to rich and poor alike with but little compensation from the former and of course none from the latter. Once I was asked to visit with him a wounded man when at a medical meeting at Torrent. As we poked along over the rough mountain roads I asked, "Doctor what do you get for your trips in this awful country; midwifery for instance?" "Well," he said, "we hope to get about seven dollars." "Do you always get that," I asked?" "No," he said, "we expect about one third down, another third in chips and whetstones and the other third we never get." Just think of it, a man wearing himself out working for such a pittance over such roads in mid-winter with a zero temperature compared with a fee three times as much and the ride, if any, in an auto over a macadamized road, is surely the work of the Gods. Man, friend, physician he was at all times and under all circumstances the same. Rest to his ashes and may the guardian angels watch carefully and tenderly over his lonely grave on the mountain side of his chosen territory. He was a consistent member of the regular (hard shell) Baptist church, a Mason, Odd Fellow, Knight of Pythias and Red Man. If we had more Doctor Coxes in the country we

would be far better off and may others rise up to emulate his example.

I. A. SHIRLEY.

DR. CHARLES HARDEN MULLEN.

The subject of this article was born at Georgetown, O., March 13, 1840, and passed away at Foster, Ky., Jan. 10, 1917, at the age of seventy-six years, nine months and twenty-eight days.

His early life was spent on the farm near Feesburg and when a boy became a member of the Methodist church at Eden, near where he lived at that time. He read medicine under the direction of Dr. O. M. Peck, of Feesburg, for two years. At the call for volunteers at the beginning of the Civil War, he enlisted as a cavalryman under Captain Feagan and served with distinction for two years, returning to his native health in 1863.

On the 24th day of December 1863, he was united in marriage to Miss Kittie Blair, at Feliety, O.

After his marriage he engaged in farming for one year, and then moved with his family to Foster where he began the practice of medicine in the fall of 1864, and continued until his retirement some eight years since.

At the time of his location at Foster the mode of travel was not as modern as now, and he covered a radius of fifteen miles on horseback, and was noted as the most graceful and best horseback rider in all this country, and was ever ready when called upon to go to relieve suffering.

While reflecting upon the life of the subject of this sketch, I am reminded of the following poem which fully depicts the character of the man.

"It is said that in his prime,
Ere the pruning knife of time,
Cut him down,
No better man could be found
By the watchman in his round,
About the town."

Cancer of Cecum in a Young Adult.—Breehot (Presse medicale, October 9, 1916) reports the case of a young soldier twenty-two years of age who came under observation complaining of slight digestive disturbances, vague pains in the right iliac fossa, and intermittent diarrhea. There was no paroxysmal colic, melena, or fever. Soon a mass of the size of two fists, vertically elongated, movable internally to the midline, and very firm and irregular, was noted. Without being able definitely to exclude hypertrophic ileocecal tuberculosis, Breehot excised the ileocecal angle and ascending colon and did a laterolateral ileo-transversostomy. The patient recovered and left the hospital apparently cured. The paucity of preexisting functional symptoms was explained by the specimen, which showed a round tumor not involving the appendix, fundus of the cecum, nor the ileocecal valve.

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EDITORIAL

THE MEDICAL ASPECT OF THE WAR.

At last, the President and the country have been forced, unwillingly enough, to recognize that a state of war exists between it and the Imperial German Government; and that this war will be conducted with the full force of the entire country, every dollar, every drop of blood, necessary to bring it to the quickest favorable termination to us will be made immediately available.

The medical profession must bear one of the greatest burdens of the war. It is conservatively estimated that it will require 19,000 medical officers within the first 18 months. Of these, the regular army now has about 1,200 and the National Guard almost as many more, leaving a deficiency of 16,600 medical officers to be supplied from civil life. The last Directory of the American Medical Association indicates that there are approximately 140,000 physicians registered in the United States. In Kentucky, nearly twenty per cent of those registered are retired, or are druggists, or are in some of the trades allied with medicine, and would not be available as medical officers.

It is, therefore, essential that all who can do so, and are capable, arrange to give their time to the country as soon as they may be needed. Possibly the easiest way to make known your readiness to serve, is to write to the Surgeon General, telling him your age, college and year of graduation, your physical condition, any special line in which you have studied or would be interested, and express your willingness to serve in the Medical Reserve Corps. This letter should be accompanied by two letters certifying to your moral character and professional attainments from your colleagues. When it is sent, write a note to the State Board of Health, at Bowling Green, stating that you have sent in the application and then certificate that you are registered will be forwarded direct to Washington. Address your letter to the Surgeon General of the Army, or

the Navy, depending on which service you prefer at Washington.

Kentucky has always done its duty in the wars of the past. It will do its duty in this war.

THE PIONEER MEDICAL MEN OF KENTUCKY.

A great English surgeon remarked to the writer many years ago, "As told to us by Gross, Sayre, Yandell and others, the early history of Kentucky medicine is a wonderful romance." Many of the facts upon which the real history of this epoch must be based, and especially the personal features and incidents, which would contribute so much to the human interest of it, most of them unrecorded, have already been buried with the contemporaries of the great actors in these professional dramas, or are rapidly fading from the memories of our elder brethren, still living, to whom these memories have been handed down as a precious heritage, but it is believed that much of this data is still accessible and, by prompt action and cooperation, can yet be saved and put in form so that one of our successors who will some day put "The Medical History of Kentucky" in permanent form.

Impressed by the importance of such prompt action about a matter already too long delayed, it is the purpose of the KENTUCKY MEDICAL JOURNAL to devote an early issue entirely to biographical sketches of some of the leading physicians and surgeons who figured so prominently in this early history, with the best photographs or pictures to be obtained of them. The sketches of McDowell, Dudley, Bush, Brashear, Brown, Polin, Yandell, Rogers and Skillman are well under way, but the facts in regard to Daniel Drake, Charles Caldwell, John Eston Cooke, Taylor Bradford, Henry Miller, and probably others whose names will occur to our readers, with pictures of each of them, are lacking, and can and should be obtained and sent in by their descendants, or by some one of our medical friends who can get in touch with them, or

from some old society transactions or medical journals not accessible to us. As an instance of what may happen in this way, a facsimile, autograph, four page, letter from Ephraim McDowell, written in 1829, two years before his death, which gives a full account of his early ovariectomies, recently sent in by a descendant of the recipient of the letter, will appear with his biography, while the original letter, carefully preserved, with a picture of McDowell, will adorn the walls of the Kentucky Memorial Society in the Capital, at Frankfort, forever: and it is hoped that pictures and mementoes collected of others of our medical heroes mentioned here can and will be perpetuated in the same way.

It is expected that this volume of the Journal will be of such inestimable value that arrangements have been made to have it put in handsome leather and gilt binding, something after the plan of the McDowell Memorial Volume, printed in 1879, which is so precious to the fortunate few who received or inherited it. The extra cost of this binding will be one dollar per volume, and it can be obtained in this permanent form only by those members and libraries who send in their orders in advance of the publication.

J. N. McCORMACK.

SCIENTIFIC EDITORIALS.

GALL-STONES.

The causation of gall-stones is a many-sided problem, and it is probably due to this fact that so many theories have been advanced as to their cause. No single theory seems to satisfactorily explain their causation in all cases; but it appears more likely that they are due to a combination of several etiologic factors.

Aschoff's theory of their formation is probably the one most widely accepted and may be stated briefly as follows: Certain individuals have a distinct cholesterol diathesis in which the lipoids are retained, causing an increase of the cholesterol content of the blood and bile. Sooner or later there is a "shower" or sudden precipitation of the cholesterol in the bile in the form of gall-stones. Rothschild has shown that the amount of cholesterol in the blood depends upon the amount of cholesterol in the food. In herbivora the blood shows rather small quantities of cholesterol, while in carnivora and omnivora the cholesterol in the blood and bile is increased according to the food taken. In men the normal cholesterol content of the blood is about .18 per cent. This is increased during pregnancy, and would seem to explain the statement of W. J. Mayo that 90 per cent. of married women who have gall-stones have borne children, and 90

per cent. of these women identify the beginning of the symptoms with some particular pregnancy.

Rosenow, who has done an immense amount of work on the selective action of certain organisms, says; "the common presence of bacteria in the centers of gall-stones, the formation of gall-stones in association with cholecystitis following injection of streptococci as observed in nine instances, and the presence of the streptococci in the newly formed stones, emphasize anew the important role which infection plays in the etiology of gall-stones." He has demonstrated streptococci, typhoid bacilli, etc., in pure culture, in the center of gall-stones, when the fluid contents were sterile; and in other instances, the nuclei of the stones often yielded pure cultures of streptococci, etc., irrespective of the bacterial flora of the fluid contents.

Deaver, in a recent article, *American Journal of Surgery*, February, 1917, presenting his results in some 800 operations upon the bile passages, says: "To my mind every gall-stone is, in the words of Moynihan, a tombstone erected to the memory of the bacterium which lies dead within."

John B. Murphy states that the cholesterol which forms 98 per cent. of all gall-stones, is the product of dead epithelial cells lining the gall-bladder, and the stones in the presence of the infection cause the deposit of more cholesterol and the formation of other stones.

That gall-stones are the result of transient thickening of the bile, is the opinion held by Rovsing. He compares the thickening of the bile to the abnormal concentration of the urine which occurs during the course of fever, and believes the inspissated bile is prone to precipitate its stone forming elements.

Statistics as to the incidence of gall-stones furnished by different authorities vary greatly, depending upon the age, sex, habits, etc., of the cases from which they are gathered. They are more prevalent in the temperate zones than in the tropics, and may occur at any age but the incidence increases progressively with advancing years. Osler says 75 per cent. or more of cases are found in persons over forty years of age, and less than 1 per cent in those under twenty years. Gall-stone disease is much more frequent in women than in men. In 4000 operations performed on the gall-bladder and biliary passages, at the Mayo Clinic, 3075 were in women and 925 were in men. Of those having stones but three were male patients under twenty years of age, while 38 females under twenty years of age had stones. The collective statistics of nineteen American and European authors, with over eight thousand necropsies, the frequency of gall stones averaged about 6 per cent.

Males were less frequently affected than females; the proportion being about one to six.

The use of the X-ray in the diagnosis of gall-stones has, with improvement in technique, come into more general use during the past few years. Cole believes he is able to demonstrate gall-stones in all cases in which they are present, while Pfahler, Carmen, and others, state that the X-ray can not be depended upon in more than 50 per cent. of cases.

The reformation of gall-stones occur so rarely as to constitute almost a negligible factor, according to Stanton, provided there is no foreign body left in the gall-bladder or ducts at operation. In his experience stones are as likely to reform after cholecystectomy as after cholecystostomy. This does not correspond with the views of C. H. Mayo who states that cholecystectomy for stones gives a much greater percentage of cures and a larger per cent. are being done at the Mayo Clinic each year for this condition. Their last report showed about four cholecystectomies to one cholecystostomy, taken in all cases of gall-bladder disease. Probably the greatest factors in preventing the recurrence of symptoms following the removal of gall-stones are: the complete removal of all foreign material from the gall bladder and ducts; the maintenance of sufficiently prolonged postoperative drainage to allow the infection to disappear; and a cholesterin free diet following all operations upon the bile passages.

GUY AUD.

ABDOMINAL VERSUS VAGINAL OR RECTAL EXAMINATIONS DURING LABOR.

It is well recognized that many cases of puerperal infection are due to the introduction of pathogenic organisms into the organs of generation by frequent vaginal examinations during labor, and careful obstetricians are not only limiting such examinations to one or two during a delivery but are trying to become more expert in the newer methods of diagnosis, in order to be able to dispense with vaginal examinations entirely. The examining hand cannot be sterilized by any of the known methods, and even when covered with a sterilized rubber glove, as should be the practice of every up to date obstetrician, microorganisms will be carried into the vagina when the fingers come in contact with the vulva. With but little practice, the diagnosis of presentation and position can be made positively by abdominal palpation and by the location of the fetal heart sound. The progress of the labor can be determined to a great extent by vertex presentations at least by noting by abdominal palpation the location of the widest part of the head, with relation to the top of

the symphysis pubis at the beginning of labor and in the succeeding examinations. When the head can no longer be felt except by very deep palpation it is self-evident that considerable progress has been made in the delivery. Vaginal examinations, therefore can only confirm what can readily be ascertained by abdominal palpation, with perhaps the added advantage of being able to determine the extent of dilatation of the cervix and the condition of the bag of waters. Any abnormalities in the pelvic canal or about the uterus, should have been discovered in the preliminary examination of the patient, that every obstetrician should make about a month before full term. Only in rare instances will a vaginal examination in addition give the first indication of a placenta previa or a prolapsed cord. The placenta previa is usually recognized even before an examination is made, by the sudden hemorrhage without pain and the location of the uterine souffle just over the symphysis pubis in such cases. Even the prolapsed cord would show such irregularity in the fetal heart sound as to lead the obstetrician to suspect some abnormal condition even before vaginal examination.

In normal and even in abnormal cases much information can be gained from rectal examinations made with the patient lying upon the side. With the gloved hand and the index finger well lubricated, an examination will be less painful, and with some experience will give the obstetrician as much information as the vaginal examination and will not subject the patient to any risk of infection in consequence. The rectal examination is of especial advantage in primipara, because the cervix is generally directed far back and to the left in the beginning of labor almost out of reach of a vaginal examination, whereas it is easily reached by the finger in the rectum. Frequent sterilization of the gloves is not necessary in the rectal examinations as the gloved hand should not come in contact with the vulva. Examinations can of course be made as frequently as desired, provided the rectum is kept free from irritation and injury.

Another method of determining the progress is based upon the location of the contraction ring of Bandl in the course of a delivery. The contraction ring of Bandl is a firm circular band of muscular fibres that can be palpated during the labor pain at the junction of the upper and lower segment of the uterus. In the unimpregnated uterus it marks the site of the internal os and is at the point where the peritoneum is reflected from the posterior surface of the bladder on to the anterior surface of the uterus. At the time of labor the area of the uterus above this zone forms the contracting or expelling portion whereas that below is the dilating part. It is

well known that as labor progresses the lower area is gradually drawn upward and away from the presenting part and in consequence the contraction ring of Bandl also rises higher. Walter E. Welz in the *February Journal of Obstetrics and Diseases of Women*, describes this method and makes deductions as follows: When during a labor pain the contraction ring cannot be felt above the symphysis pubis then dilatation has not reached the size of a dollar. When the ring is two fingers breadth above the symphysis you have about 4 cm. when three fingers above, 8 cm., and with four fingers above the symphysis dilatation is complete.

It may be supposed that considerable experience will be necessary before one can derive much information from this method. It surely has this advantage. It does not subject the patient to any undue exposure, it is not painful as both vaginal and rectal examinations are apt to be and it cannot possibly lead to infection. The method in addition may lead to more careful observation of the condition of the abdomen and uterus during a labor, such observation may detect an impending rupture of the uterus at times and it may also lead to more frequent auscultation of the fetal heart, a measure very much neglected and really more important than the amount of dilatation of the cervix in most cases.

EDWARD SPEIDEL.

PHTHISIS AND PULMONARY SYPHILIS.

There has long been a belief among some physicians, and laymen, too, that syphilis has a beneficial influence upon pulmonary tuberculosis. Where and how this belief first came into existence is hard to trace. No scientific explanation has ever been advanced for such a possible phenomenon. It is true that in England, Abrams, Ross, Knight, Pourtalis and others have reported cases of phthisis which improved after having acquired a luetic infection, but the few cases of this kind would seem to be the exception and not the rule. German investigators, in particular, report observations that directly refute the possibility of a luetic infection having any beneficial influence upon the tubercular process. They hold that the acquirement of either syphilis or tuberculosis by a person already suffering from the other of these two disease has a distinct tendency to cause an aggravation of the primary disease, while the secondarily acquired infection, having a weakened resistance with which to cope, is usually more severe than ordinarily met with.

For the luetic infection to have a beneficial influence on the phthisical lesions it would have to cause either an increase in the gen-

eral resistance throughout the body or in the tissues of the lungs. Syphilitic individuals do not show any immunity to primary infection with tuberculosis as far as has been observed; in fact, among the colored race it would seem that it is those individuals who have been weakened by the ravages of syphilis who most readily become infected with pulmonary tuberculosis and most quickly succumb before it. Nor is there any theoretical reason for believing that the presence of the spirochetæ cause any production of substances which might confer partial or complete immunity to the bacillus tuberculosis.

The belief in the power of the luetic infection to aid the lungs resist the tubercular infection is probably based upon the similarity of the tubercle of phthisis and the gumma of syphilis, whence it is deduced that immunity to one should cause immunity to the other. This theory would require a belief in the power of the tissues of the lung to resist the tubercular process when furnished the extra stimulus from the presence of spirochetæ in the lung; this would mean that there would have to be an actual syphilitic infection of the lungs or there would be no increase in the resistance to the tubercular lesions.

The lung is probably the least often affected of organs in syphilis. Osler states that he discovered only 12 cases of syphilis of the lungs in 2,500 autopsies and Fowler saw only ten true cases and two doubtful ones among all the material he inspected among the anatomic museums of London's hospitals and the Royal Chirurgical College. Among the many investigators of syphilis it is universally acknowledged that the lungs are rarely affected. Therefore, it is not of much practical value whether syphilis of the lung does or does not protect against phthisis. However, it is a point that has been accepted by some without proof and therefore should be cleared up if possible. Certainly our knowledge of the pathology of the conditions would lead us rather to believe that the presence of either infection would weaken the defenses of the organ to infection by the other. It does not seem logical to believe that an infection which the lung cannot overcome, but which is steadily destroying the tissues locally as well as causing toxemia and general weakening, should yet strengthen the lung to the point where it is able to destroy a similarly destructive infection from another germ.

The similarity of the lesion causes by the bacillus tuberculosis and that due to the spirocheta pallida is so great as to render a differential diagnosis of the two conditions most difficult. Verchow, Wodsack, Remsen, Hertz, Diel, Pavlinov, Langerhans and a great many other prominent pathologists all agree that the diagnosis of syphilis of the lungs is most

difficult to make, even with clinical data and gross and microscopical examinations of the lesions, mainly owing to the resemblance to the tubercular nodule. Even Massia who made a most complete and careful study of syphilis of the lung from the pathological side is rather hazy when he attempts to differentiate the two conditions. However, according to Massia, Hiller and Tripier, the differentiation of the two may usually be made through observation of the following points: (1) Tuberculosis usually begins in the apices and spreads downward; syphilis begins at the roof of the lung, anteriorly; (2) the caseation of the gumma is firmer, more opaque and much less apt to liquefy than the caseation of the tubercle; (3) the luetic infection contains but few giant-cells; in fact, Baumgarten denies their presence at all in pure non-tubercular syphilis; (4) cavity formation of luetic origin shows but little tissue destruction, being a dilation cavity, due to bronchial stenosis; (5) stenosis of the trachea and larger bronchi are quite frequently present in luetic infections, but very rare in the tubercular; (6) secondary infection from pus-organisms seldom occurs in lues, but nearly always occurs at some stage or other in phthisis; (7) while it may be impossible to demonstrate the spirochetæ in the gumma, still there will be no acid-fast rods present, while in the tubercle it is not difficult to find the tubercle bacilli. The diagnosis in the living subject depends upon the establishment of the presence of lues in the body, whether by history, blood tests, or signs of luetic infection of other tissues, upon the physical findings in the chest, fever, lower in range and not so definitely of the evening type as in phthisis, and the absence of acid-fast rods in the sputum.

Until we have some proof—and as yet we have none at all—that the products of growth of the spirochetæ in the body are detrimental to the tubercle bacilli or are capable of stimulating the production of immune bodies or of producing a local reaction against the tubercle bacilli we have no reason to accept unsubstantiated theory that tuberculosis of the lungs is in any way checked by a superimposed luetic infection.

M. L. RAVITCH AND S. A. STEINBERG.

Operative Treatment of Abscess in the Lung.—

Friedmann lists 121 articles published since 1900 and seven others which contain practically the total bibliography on operative treatment of suppurative processes in the lungs outside of tuberculosis and bronchiectasia. He draws a number of conclusions from study of this material.

ORIGINAL ARTICLES

THE VALUE OF BLOOD AND URINE EXAMINATIONS IN THE DIAGNOSIS OF NEPHRITIS.*

By C. W. DOWDEN, Louisville.

DEATH RATE FOR 100,000 POPULATION IN THE UNITED STATES.

Registration Area for Deaths.

Annual Average	Acute Nephritis	Bright's Disease
1901 to 1905	9.6	87.4
1906 to 1910	10.1	87.4
1910	10.5	88.5
1911	10.0	87.5
1912	10.6	92.5
1913	10.4	92.5

There is much food for thought in the above table. Not only from the standpoint of public health, but from an economic standpoint as well, the clinician should welcome all new investigations concerning nephritis, and especially those pertaining to its early diagnosis. Of further economic interest also, is the fact that a very large percentage of the real valuable men, who die yearly,—men whose influence is felt in a community, and who leave behind vacancies that are so often unfilled, are claimed by a condition that starts primarily as a disturbance of renal function. These deaths are not always attributed to nephritis, because the numerous and varied sequelæ of functional disturbance of the kidneys, so often have their termination in diseases of the heart and blood vessels, and the chief etiologic factor is overlooked.

There never has been and never will be a curative treatment for chronic nephritis; there has never been and never will be a conventional treatment for chronic nephritis. It follows, therefore, that any reduction in the mortality of nephritis in the future, must come through the careful application of those tests, which will demonstrate the pre-nephritic stage, or advise us of the presence of kidney pathology in its incipency. Recent investigations have not only given us such tests, but as a result of such tests, have given us accurate methods for safe guarding and conserving those already afflicted. These methods are not based on the symptoms of the patient, on the presence of high blood-pressure, or on the presence of albumin and casts in the urine, but solely and with an accuracy that is not approached in the treatment of any other non-specific disease, on the

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

tension; then they further show, in a number of cases of passive congestion of the kidney, an impairment of the phenolsulphonephthalein output, without an increase of waste nitrogenous products in the blood. Agnew⁸, also shows from a comparison of the phenolsulphonephthalein output and the retention of incoagulable nitrogen in the blood in cardio-renal cases, that there was no increase in the latter, in cases of cardiac insufficiency, whereas the former was always lowered. It is at once apparent that this fact gives us an excellent method for differential diagnosis.

Tillotson and Comfort⁹, applying Folin's methods for the determination of non-protein

The diagnostic, prognostic and therapeutic value of blood examinations, thus become inestimable. Other observers along the same line are Foster¹⁰, Folin, Denis and Seymour¹⁷, Schwartz and McGill¹² and others.

O. Folin and W. Denis¹³, group a series of cases into four classes for the purpose of diagnosis, with reference to the relation between the non-protein nitrogen and uric acid in the blood. (1) those cases in which both are normal; (2) those with normal uric acid and greatly increased non-protein nitrogen; (3) those with normal non-protein nitrogen and a large amount of uric acid; (4) those with abnormally large amounts of both.

NO. 2—W. J.

URINE										
Time	Quantity	Sq. Gr.	%	NACL. Gms	%	Total N. Gms.	%	Urea N. Gms.	Am. Gms.	Alb. & Class
8-10	50	1.015	1.041	.5205						
10-12	48	1.020	1.029	.4939						
12-2	84	1.020	1.064	.8937						
2-4	66	1.021	1.029	.6791						
4-6	44	1.027	1.029	.4527						
6-8	48	1.028	1.017	.4678						
Total										
Day	338			3.5077	.91	3.075	.73	2.467	.284	None
8-8	240	1.026	1.017	2.4408	1.22	2.928	.83	1.992	.182	None
Total										
24 hrs.	578			5.9485		6.003		4.059	.466	Sugar
Intake	1760			8.5000		10.700				negative.
	+1182			+2.5515		+4.697				

INTERPRETATION:

Marked retention of fluid—moderately so of salt and nitrogen.
 Fixation of quantity with tendency to fixation of specific gravity.
 Fixation of salt and also concentration of salt. Slight but prompt response to noon meal for both fluid and salt. Blood shows marked retention of nitrogen and hyperglucemia.
 Evidence very strong of tubular involvement of kidneys.

BLOOD Mg per 100 c.c.

Blood Pres.	N.P.N.	Urea N.	Ur. Ac.	Sugar
128-80	95.2	84.0	1.00	.30%
Ambard's Constant				
.53				
Phenolsulphonephthalein				
Drug appeared in 13 minutes				
1st hour21 per cent.				
2nd hour20 per cent.				
Total41 per cent.				

nitrogen and urea in the blood, accept figures below 30 mg. per 100 c.c. of blood as normal for the former, and figures below 16 mg. per 100 c.c. of blood as normal for the latter. From 30 mg. up to 100 mg. of non-protein nitrogen per 100 c.c. of blood, are encountered the various degrees of renal insufficiency; over 100 mg. constitutes a very dangerous elevation, and even when this is lowered to or near the normal figure, relapse with death usually occurs in a few months. They furthermore determine that contrary to the general belief that eclampsia of pregnancy is identical with uremia, that in the former there is very little or no retention of nitrogenous waste products, while in the latter we obtain our highest figures for such retention.

Those in the second class are rather characteristic of arthritis and in this respect frequently resemble the blood of glomerular nephritis. True gout is characterized by abnormally high uric acid content of the blood without accumulation of the other nitrogenous products unless nephritis, is also present. Before applying this test for diagnostic purposes it is necessary that the character of the patient's diet be determined beforehand, since it has been shown that on a high protein diet the quantity of non-protein nitrogen in the blood is greatly increased. For the uric acid however, W. Denis¹⁴, has shown that a normal individual may take large amounts of purin containing foods without increasing the uric acid content of the blood. In the various

pathological conditions however, even where the damage to the kidney has not progressed to the point when nitrogen retention is apparent as shown by the non-protein values, an accumulation of uric acid takes place in the blood after a short period of purin feeding. Uric acid tests for the purpose of diagnosis, therefore need not necessarily be preceded by a period of purin free dieting, except where kidney insufficiency exists.

Myers and Lough¹⁵, demonstrate in a series of cases, the value of creatinin, uric acid, and urea determinations in the blood. Of 11 cases showing over 5 mg. of creatinine per 100 c.c. of blood, all terminated fatally within a few days to two months. Of the three compounds, they conclude that creatinin is normally the most readily, and uric acid the

sore throat, etc. For one of my first cases I played the dual role of physician and patient. During one of the excessively warm summer days, while I was perspiring freely, I took a short automobile ride in the evening, without coat or hat. During the night I was awakened by a sore throat, muscular pains in my back and extremely sore and stiff joints. The tonsils were greatly congested and this not unusual combination of symptoms, was responsible for a diagnosis of arthritis with a focus of infection in the tonsil. The day following, I examined my blood and found that it contained 5 mg. of uric acid per 100 c.c. Other nitrogenous compounds were normal. A few sweating procedures with a few doses of atophan soon reduces the uric acid to normal and with the reduction came allevi-

NO. 3.—D. McD.

URINE

Time	Quantity	Sq. Gr.	NACL.		Total N.		Urea N.		Alb.	Casts
			%	Gms	%	Gms.	%	Gms.		
8-10	76	1.022	1.0296	.8825					None	Plus
10-12	86	1.018	1.0530	.9056						
12-2	107	1.022	.9848	1.0537						
2-4	100	1.025	.9945	.9945						
4-6	100	1.022	1.0296	1.0296						
6-8	138	1.023	1.0413	1.4370						
<hr/>										
Total										
Day	607			6.1029	1.064	6.4584	.952	5.77		
8-8	490	1.030	1.0413	5.1024	1.064	4.9136	.952	4.66		
<hr/>										
Total										
24 hrs.	1097			11.2053		11.3720		10.44		
Intake	1760			8.500		13.4000				
<hr/>										
+ 773			- 2.7053		+ 2.0280					

INTERPRETATION:

Decided tendency to fixation of two hour specimens, with a very noticeable tendency to fixation of specific gravity and a marked tendency to fixation of salt concentration, but not of quantity. The percentage of both the nitrogen and urea is the same in the day and night urine which is unusual. There is but slight or no response to the morning and noon meal, but fair in the evening. The night quantity of urine is somewhat increased but the nitrogen concentration is satisfactory. The salt and nitrogen balance are satisfactory but there is decided water retention. The blood analysis shows considerable retention of non-protein and urea-nitrogen, a slight increase over normal of uric acid and a decided hyperglucemia. The whole picture is one of early hypertensive nephritis.

BLOOD Mg per 100 c.c.

Blood Pres.	N.P.N.	Urea N.	Ur. Ac.	Sugar
182-130	53.2	22.4	3.62	.25%

Ambard's Constant
.105

Phenolsulphonephthalein
1st hour 41.6 per cent.
2nd hour 8.0 per cent.
Total 49.6 per cent.

least readily eliminated with urea standing in an intermediate position. There is much evidence to support the theory that the retention of uric acid is first to become evident in Bright's disease, and it likewise lends support to the old theory that gout depends primarily upon a disordered renal function.

I have demonstrated to my own satisfaction that a retention of uric acid in the blood will often account for conditions that are often attributed to focal infections. I refer particularly to those cases, which soon after exposure to drafts or damp weather, complain of muscular and joint soreness, stiffness,

ation of all my symptoms. It is needless to say that I still retain my tonsils. I have seen the same thing happen a number of times and in several instances, after removal of the tonsils had failed, to give relief. The above is somewhat of a digression, but it no doubt occurred to you as it often has to me, that quite a close relationship exists between the kidneys and the skin as eliminating organs and to interfere with the function of one means an overburden for the other and while the skin is often called upon to relieve the overburdened kidneys through a process of sweating, little attention has been given the condition.

where the kidney is overburdened through a sudden cessation of skin function through a process of chilling, etc.

Myers and Chase¹⁶ have shown that uric acid retention, due to lowered permeability of the kidney as a result of nephritis, is not influenced by atophan, whereas in uncomplicated gout, the diminution of uric acid in the blood is rapid and marked. We therefore have in atophan a valuable diagnostic as well as therapeutic agent, and failure to reduce the uric acid content of the blood after taking atophan would indicate the presence of nephritis. It remains to be seen whether the re-

the blood were estimated, the combined figures show the following averages.

Blood Pressure....	9.5	12.0	22.0	36.0	20.0
Phenolphthalein ...	22.0	27.0	17.0	21.0	12.5
Non P. Nitrogen ...	17.0	28.0	8.0	21.0	26.0
Urea Nitrogen	34.0	18.0	8.0	22.0	22.0
Uric Acid	6.0	18.0	38.0	25.0	12.5
Creatinin	44.0	14.0	3.0	17.0	22.0

†Indicates degree of involvement.

From such an impartial study the figures show that the determination of the phenol-sulphonephthalein output, and the uric acid content of the blood, show evidence of disturbed function in a larger number of cases than the others. For the fourth degree of in-

NO. 4.—R. C. K.

URINE

Time	Quantity	Sp. Gr.	NACL.		Total N.		Urea N.		Alb. & Casts
			%	Gms.	%	Gms.	%	Gms.	
8-10	154	1.018	.6518	.97297					
10-12	100	1.020	.8009	.80900					
12-2	122	1.018	.7488	.90353					
2-4	98	1.023	.6318	.61916					
4-6	110	1.018	.9680	.51180					
6-8	108	1.015	.5146	.54547					
Total Day	690			4.26493	.658	4.54	.56	3.863	Plus
8-8	400	1.020	.5616	2.24640	.910	3.64	.658	2.732	Plus
Total 24 hr.	1090			6.51133		8.18		6.596	Sugar
Intake	1638			8.20000		11.31			Negative
Balance	+ 548			+ 1.68867		+ 3.13			

INTERPRETATION:

Normal variance in quantity and specific gravity, sodium chloride output satisfactory with no tendency to fixation. Slight nitrogen retention but fair night concentration. Slight retention of fluids. All nitrogenous products are high in the blood and of still more interest in the hyperglycemia. The phthalein function is low and Ambard's constant is high.

The diagnosis here is diabetes with a mild nephritis.

BLOOD Mg per 100 c.c.

Blood Pres.	N.P.N.	Urea N.	Ur. Ac.	Sugar	H.I.
135-80	49	28	5.8	.342%	7.4

Ambard's Constant
.157

Phenolsulphonephthalein
32 per cent.

tention of nitrogenous waste products in the blood, always means a lowered permeability of the kidneys for these things or whether they are due to overproduction (endogenous) which exceeds the normal excretion threshold of the kidney.

While there is considerable difference of opinion as to which of the newer functional tests are the most valuable, we must not, in our enthusiasm for things new, overlook or discard the older and tried methods without first having carefully analyzed the results. In a study of nearly 100 cases of interstitial nephritis, that have been reported by Meyers and Longh¹⁷, Myers and Fine¹⁸, Tillotson and Comfort¹⁹, Agnew²⁰, and Hopkins and Jones²¹, and in which blood-pressure, phenol-sulphonephthalein, and the non-protein nitrogen, urea nitrogen, uric acid and creatinin of

involvement there is a very close agreement of figures with the blood pressure the highest, and the uric acid next. For the third degree of involvement, the uric acid leads with 38 per cent and then follows blood pressure with 22 per cent. For the first and second degrees of involvement, the phenolphthalein non-protein nitrogen and urea nitrogen give about the same figures. I have purposely omitted the creatinin on account of my lack of experience with this product and for fear that my figures of 2.1 to 3 mg. per 100 c.c. of blood for the first degree of involvement may possibly fall under the normal column. It is quite apparent, however, that when the results of different workers are studied collectively that there is a wide difference from the results reported individually. This, of course, should not be and is probably due to the different methods employed. There

seems to be fair agreement, however, that uric acid retention gives earlier evidence of disturbed renal function, than the retention of other nitrogenous products, thus making this a most valuable diagnostic procedure. For the advanced stages of nephritis, no functional tests at all are necessary, except for prognostic purposes, since the physical picture itself is such as to make diagnosis unmistakable.

I have had but little experience with Am-
bard's constant²⁸ and none with McLean's
modification of the same, as to the law of urea
excretion, but where the former has been ap-
plied the results in each instance, indicated to
an equal degree, the amount of disturbance of
function obtained with the other methods.
Under table No. 1, I would call your atten-

caused him to seek an examination that would
give him some information as to what his lim-
itations were in the future as to work, diet,
tobacco, stimulants, etc. I have little doubt
that a readjustment of this man's daily life
at this time, will prolong his life many years.
Table No. 4 is very similar and the same re-
marks are applicable.

In concluding I would particularly empha-
size the fact, that of the new tests for deter-
mining renal insufficiency and early nephritis,
that a close parallelism exists, and the differ-
ence is one of degree. We should particular-
ly welcome those, that give us evidence of
early disturbance, because herein lies our op-
portunity for effective treatment. For gen-
eral applicability I should first recommend
the determination of the fluid intake and out-

NO. 5.—F. G.

URINE

Time	tity Quan.	Sp. Gr.	Gms. NACL.	Total N.	Urea N.	NH ₃	Alb.
8-10	190	1.014	1.9117				Faint to heavy trace
10-12	150	1.008	.8424				
12-2	60	1.013	.4352				
2-4	170	1.010	.5370				
4-6	230	1.002	.2960				
6-8	310	1.004	.4352				
Total Day	1110		4.4575	6.34	4.44		
8-8	490	1.012	3.0698	4.28	3.29		
Total 24 hr.	1600		7.5273	10.62	7.73	.51136	
Intake	1230		6.2000	9.10			
	-370		+1.3273	-1.52			

INTERPRETATION:

Practically a normal reaction to a nephritic test meal.
The low specific gravity suggests some interstitial
involvement but there is no fixity of specific grav-
ity or of the quantity of salt to indicate this. The
picture is more like a receding diffuse nephritis
with elimination of edema. The microscopic pic-
ture and especially the presence of large amounts
of albumen and casts and blood cells immediately
following a headache and vomiting, definitely asso-
ciates the two conditions. The uric acid in the
blood is excessive. Normal (1 to 3 mg.) and su-
gar very high, normal (.08 to .12 gm.) both of
which are factors. On the whole the renal func-
tion is only slightly impaired at this time.
Blood tests made before nephritis test given but diet
has been practically purin free.

BLOOD
Mg. per 100 c.c.

Blood Pres.	N.P.N.	Urea N.	Ur. Ac.	Sugar
122-80	28	12	4.8	.28%

Phenolsulphonphthalein
61 per cent.

Microscopic
Hyaline and granular casts, blood
cells. After attack of headache
and vomiting, granular casts, a
few white, 30 to 50 R. B. C. to
1-6 field Sugar negative.

tion particularly to the case of W. J. and D.
McD. In the first case there was absolutely
nothing to point to a disturbance of renal
function either from the symptoms of the
patient or the physical examination. Table
No. 2 shows also the urinary response to the
nephritic test meal as recommended by
Mosenthal²³, and shows an equal degree of in-
volvement. Table No. 3 is the case of D.
McD., and shows us the very great value of
both tests. This patient was and is a perfect
specimen of health and was absolutely symp-
tomless, but a very high degree of intelligence

put with special reference to the fixation of
quantity and specific gravity and to noc-
turnal polyuria. Should any irregularities
appear from this procedure they can then be
supplemented by the more difficult tests. The
phenolsulphonphthalein is always necessary
and gives us information equal to any other
single test. These procedures can be applied
by any physician. Of the more complicated
blood tests, which contrary to reports, are not
at all simple if done properly, an estimation
of uric acid retention should have the prefer-
ence, since it shows earlier evidence of func-
tional disturbance than the other tests. Next

in order would be urea nitrogen and the non-protein nitrogen retention after proper consideration of the proteid intake. The late appearance of creatinin would appear to give this test doubtful value as a diagnostic procedure, since by this time the other tests are equally instructive and the subjective symptoms themselves would hardly admit of an incorrect diagnosis. The point, however, as to its prognostic value, is well taken. When all the foregoing tests are applied the application of Ambard's constant is no additional labor.

While too much credit can not be given the various workers, in this particular field, it is unfortunate that, due to various methods em-

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18. Meyers and Fine: *Jour. Biolog. Chem.*, Vol. XX, No. 3, P. 391.

19. Tillotson and Comfort: See foot note No. 9.

20. Agnew: See foot note No. 8.

21. Hopkins and Jonas: See foot note No. 7.

22. Ambard: Physiologic Normale et Pathologique des Reins, Paris, 1914.

23. Mosenenthal: See foot note No. 6.

NO. 6.—A. T. H.

URINE							Blood Pressure	
Time	Quantity	Sp. Gr.	NACL. %	Gms.	Total	N.	Alb. & Casts	180-110
8-10	222	1.011	.5382	1.19				Phenolsulphonephthalein 40 per cent.
10-12	160	1.012	.5382	.86				
12-2	100	1.011	.5031	.50				
2-4	112	1.013	.4095	.46				
4-6	152	1.012	.4446	.57				
6-8	144	1.014	.5616	.81				
Total Day	800			4.49	.231		None	
8-8	612	1.013	.4466	2.71	.364		None	
Total 24 hrs.	1502			7.20	.595			
Intake	1760			8.50	13.400			
+ 262				+ 1.30 + 12.995*				

INTERPRETATION:

Fixation of specific gravity. Increased quantity of night urine. Nitrogen retention.

Interstitial nephritis. (This table shows the value of the urine examination alone).

*Six duplicates.

ployed and results obtained, that such confusion and contention has arisen. More than anything else it convinces the man on the side lines, that a single simple reliable test of renal function is yet to be discovered.

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METHODS EMPLOYED.

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Hydrogen Ion: Method of Levy, Rountree and Marriott, (*Archives Inter. Medicine*, Vol. XVI, No. 3, 1915).

Phenolsulphonephthalein functional test: Method of Rountree and Geraghty, (*Jour. Phar. and Expr. Ther.*, 1910, I, 579).

Urine Examination: According to Mosenenthal's modification of the Hedinger and

Schlayer method (*Arch. Inter. Med.*, Vol. XVI, No. 5, 1915).

Sodium chloride estimation: Volhard method.

Ambard's co-efficient:

$$K = \frac{UR}{\sqrt{D \times \frac{70}{P} \times \frac{\sqrt{C}}{\sqrt{25}}}}$$

K equals Coefficient.

UR equals Urea grams per liter of blood.

D equals Urea grams excreted in urine in 24 hours.

C equals Urea grams per litre of urine.

P equals Body weight in kilograms.

70 equals Standard body weight in kilograms.

25 equals Standard concentration of urea grams per liter of urine.

Dr. Dowden did not touch upon the H-ion concentration. This particular work of the laboratory is of great value to us, and particularly to those practitioners who are engaged in general medical work, and it is along this line that there is being done at the present time in a few places in this country much interesting and valuable work which is of inestimable value to the men who are engaged in general practice particularly, as well as those who are doing special lines of work. But I think the greatest value of this is to those who are principally engaged in general practice.

I think this is a valuable contribution to the Association because we are not having this kind of work done everywhere in this country. Personally, I know of not more than half a dozen laboratories or half a dozen men who are doing this character of work. I know there are men here who are familiar with it, who are reading the current medical literature of to-day in regard

NO. 7.—M. H. D.

URINE

Time	Quantity	Sq. Gr.	%	NACL. Gms.	Total N. %	Urea N. %	Alb. & Casts
8-10	94	1.015	.8501	.3027			
10-12	126	1.014	1.0179	1.2726			
12-2	290	1.007	.3193	.9251			
2-4	320	1.004	.4212	1.3472			
4-6	84	1.013	1.0179	.8484			
6-8	270	1.004	.1872	.5049			
Total Day	1184			5.7009	.560	6.6304	None
8-8	502	1.012	.5957	2.9919	.588	2.9517	None
Total 24 hr. Intake	1685			8.6928		9.5821	.462 7.7893
	1760			7.4000		13.4000	
	+ 86			- 1.2928		+ 3.8179	

INTERPRETATION:

Normal response to meals with no tendency to fixation of quantity specific gravity or salt concentration or quantity.

There is some retention of nitrogen and this is corroborated by the quantity in the blood and the phenolphthalein test. This, taken together would suggest an early hypertensive nephritis.

BLOOD Mg per 100 c.c.

Blood Pres.	N.P.N.	Ur. Ac.
115-75	58.8	5.8

Phenolsulphonephthalein
1st hour 3 per cent.
2nd hour 6 per cent.
Total 9 per cent.

DISCUSSION.

Louis Frank, Louisville: I am not engaged in general practice, and I am not familiar with the methods of the laboratory, but I do dislike to see a paper of this sort go by without any discussion, because I think it is a character of work which marks an important era in the development of prognostic and diagnostic methods in our laboratory work. We have found laboratory work along the line of blood examinations particularly of very great value in the estimation of the resistance of patients for operative work and in determining just exactly how far we may expect to go in our operative procedures.

to it, and I would like for the benefit of ourselves to have some of these gentlemen discuss these questions.

Herbert Bronner, Louisville: Like Dr. Frank, I do not think that an exceedingly valuable and scientific contribution of this character should go by without discussion. I hope that some of our internists will discuss the paper because it is meant directly for them, but the paper is one that should be of interest to all of us. To the urologist it is certainly of great interest. The triumph of modern surgery lies in the more careful diagnosis and examination of cases. This is probably truer in work on the urinary organs

than in any other field. We know that the old methods of examination did not give us a proper prognostic and diagnostic standard, but the tests that have been outlined by Dr. Dowden to-day have been of enormous aid to us. Just as he mentioned, we see a great many cases where, if we relied on the ordinary urinalysis, we could not give an accurate prognosis at all. It is such tests as the phenolsulphonephthalein tests which have been of enormous help to us. For instance, take a case of enlarged prostate, in which, in a large percentage of cases, renal changes take place. Dr. Dowden did not mention it in his paper, but probably will in his closing remarks as he has examined a number of cases, especially of the chronic interstitial type, with traces of albumin in the urine, and yet by the examinations he has outlined, especially the phthalein test and urea in the blood and urea in the urine, he can say this or that patient is a fit subject for op-

etc., were examined. Dr. Dowden finally made a blood examination; I do not remember the exact percentage, but his report stated that this patient had more uric acid than any of the cases he had ever examined, while examination of the urine was absolutely negative. I mention this to show the value of these methods of examination.

W. L. Heizer, Bowling Green: There was one feature of this paper that ought to be brought to the attention of the medical profession of this State, although it was only hinted at by the author. Our death rate from typhoid fever is approximately 40 per 100,000; the average death rate from tuberculosis is 10 to 100,000; the average death rate from Bright's disease is 87 per 100,000; therefore, the death rate from Bright's disease is a great problem as it is nearly one-half the death rate of tuberculosis. It has been stated that the whole time health officer bill will,

NO. 8.—C. J. C.

URINE

Time	Quantity	Sp. Gr.	NACL.		Total N.	Urea N.	Uric Acid,	Alb. & Casts
			%	Gms.				
8-10	360	1.006	.3544	1.2758				None
10-12	240	1.004	.3544	.8505				
12-4	210	1.012	.8073	1.6953				
4-6	60	1.017	1.1700	.6020				
6-8	230	1.014	.7956	1.8298				
Total Day	1100			6.2534	3.322	2.475		
8-8	660	1.011	.6181	4.0794	2.244	1.518		
Total 24 hrs.	1760			10.3328	5.566	3.993	.5148	
Intake	1620			8.5000	6.510			
Bal.	+140			+1.8328	+.944			

INTERPRETATION:

Normal response to test.

Diagnosis—Extreme ptosis of abdominal organs. Recent operation for suspension of uterus, removal of appendix, etc.

BLOOD
Mg per 100 c.c.

Blood Pres.	N.P.N.	Urea N.	Sugar	H. I.
120-80	22.0	6.2	.111%	7.4

eration or not when brought to the surgeon. It is not only in cases of enlarged prostate, where the tests are of benefit, but also in kidney lesions, that is, he is able to say to the surgeon that "You can operate on this case or you cannot. If you operate on this case the chances of the patient living are good because the other kidney is not only doing as much work as it ought to do, but is hypertrophying to the extent that it can take care of further work.

I do not believe Dr. Dowden will object to my mentioning a case in which he made an examination for me recently. I simply mention this case because it is along the line of uric acid in the blood. This was a case of persistent urticaria. You probably know that cases of urticaria of the chronic type are the bane of our existence. There is a focus somewhere which causes the trouble. This patient had been gone over from every standpoint. His teeth, his tonsils, urine

when put into effective operation, cut down the death rate from preventable diseases and be the means of diminishing our income. If whole time health officers, properly trained, would make the kind of intelligent men the doctor referred to, who will go to physicians for examination to determine whether or not they are able to do as much work as they have been doing, great good will be accomplished, and the doctor's income will take care of itself. In other words, we have got to pay attention to the degenerative diseases, to the cancer problem, to the tonsil problem, and to the other deficiencies that the human race is heir to.

This paper contains a valuable public health hint, and I think the doctors of the State should begin to get ready for this new era when the health officer in the exercise of his duty will refer people to physicians for examination not only

in the cases of nephritis, but in the other conditions mentioned.

S. J. Meyers, Louisville: I wish to thank Dr. Dowden for his valuable contribution. We have a little pride in speaking for a moment on this subject because we have been associated with him sufficiently in the laboratory to know the unselfish work he has been doing. Those who are interested in internal medicine alone, must know that the day has come when a urinalysis of itself is nothing. We do not believe the day is far distant when life insurance companies will not attach the importance they have to urinalysis because a single examination, unless it has been scientifically made, is worth very little. We are sure, that in a great many cases that Dr. Dowden has gone over for me the blood examination has been the most valuable of all. This is true not

concentration to do this work efficiently. He would not take sufficient time to master the technique necessary to do this blood work and whenever we learn the value of it, and whenever we are big enough to let cases go to a man who is doing this work for an opinion, then we will do the best work for ourselves and for the patient.

W. W. Anderson, Newport: I am very glad to have had the privilege of hearing this very scientific paper by Dr. Dowden. I would like, however, to take issue in a small way regarding one point, if I understood Dr. Dowden correctly, when he said there is no cure and never will be a cure or rational treatment for nephritis. I think perhaps, speaking in the present tense, he is correct, but I do not like to say there never will be because I am not sure of that. Never is such a long time, and I hope for good things to

NO. 9.—S. A.

URINE

Time	Quantity	Sp. Gr.	NACL. %	Gms	Total N.	Urea N.	Alb.	Casts
8-10	36	1.008	.7605	.2737				
10-12 and 12-2	58	1.010	.8073	.4622				
2-4	172	1.006	.4797	.8250				
4-6	106	1.010	.7488	.7937				
6-8	150	1.003	.3861	.5791				
Total Day	522			2.9397	1.887	1.5318	None	None
8-8	400	1.008	.4914	1.9656	1.684	.962	None	None
Total 24 hrs.	922			4.9053	3.571	2.4938		
Intake	1140			6.2	5.000			
	+218			+1.2947	+1.429			

INTERPRETATION:

Normal response to test meal. Note the phenolsulphonaphthalein output which alone is very misleading.

Diagnosis: Anemia.

BLOOD
Mg per 100 c.c.

Blood Pres.	N.P.N.	Urea N.	Hydrogen Ion
	22.3	7.84	7.7

Phenolsulphonaphthalein
Drug appeared in 3 min.
1st hour12 per cent.
2nd hour16 per cent.
Total28 per cent.

only of the nephritic cases but diabetic cases. It is also true of those cases which, for want of a better name, we have denominate rheumatic. I know that the layman as well as the physician believes that examination of the urine furnishes valuable information; that Dr. Dowden will tell us that it is the blood examination that gives diagnostic information and not the urine, because oftentimes under the conditions he has described, particularly of his own case of sore throat and muscular pain, the urine may show nothing, only that you get after-therapeutic results.

The methods described by Dr. Dowden will never become popular until the internist becomes unselfish, because not one practitioner in ten, is able to give the time and attention necessary for

come. There are some of us who even hoped that transplantation of kidneys might save some of these cases; it does not look promising at present, but let us not be too dogmatic and say it never can be done because when we are dogmatic we proceed no further. With that slight criticism, let me make a few remarks on other points.

This very scientific testing that is called for in this paper is, of course, an excellent thing and much to be desired, but some of us who are in the trenches of everyday practice among the common people find we cannot persuade them to undertake these expensive and elaborate examinations, and we do not have within easy reach doctors who are able to do the work very often. Where it can be done, and where we can per-

suade them to have these blood examinations made, it certainly should be done. But what are we to do with the fellow for which such examinations are not applicable or available? We can carry out the simple tests he has suggested, such as taking blood pressure, and the tests of the intake and output of fluids, and a few other things. We can do that which is valuable as far as it goes, and then we undertake something in the way of simple management of the cases that are nephritic or supposed to be nephritic or threatening to become so. We may warn people, for instance, who believe the chief cause of Bright's disease, as they put it, is alcoholism, that while that is a factor, there are far more people digging their graves for Bright's disease

case after case of nephritis do very well when put on proper diet, with everything else going well, but with hard work the symptoms would materially increase. The strain of working increases the blood pressure and so on, but even the albuminous waste, the muscle waste must be thrown off by the kidneys the same as if there is a heavy intake of albuminous food. A man in the simple walks of life in general practice can attend to these matters and benefit his patients.

A. Sargent, Hopkinsville: I do not wish to discuss the laboratory aspects of this paper, although they are very interesting and very enlightening, but they deal with the end results. They do not deal in my opinion with the causes, and until we cease to pay all of our attention in

NO. 10.—DR. T., Male, Age 32.

URINE

Time	Quantity	Sp. Gr.	%	NACL. Gms	%	Total N. Gms.	Urea N. Gms.	Alb.	Casts
8-10	32	1.009	.1989	.06364				++++	Hyaline and Granular
10-12	118	1.008	.2691	.31753					++++
12-2	94	1.010	.3627	.34093					
2-4	70	1.011	.2574	.18018					
4-6	70	1.010	.2691	.18837					
6-8	132	1.008	.1521	.20077					
Total Day	516			1.29142	.490	2.5284	.490	2.5284	
8-8	770	1.008	.4680	3.60360	.375	2.8875	.250	1.9250	
Total 24 hrs.	1285			4.89302		5.4159			
Intake	1760			6.20000		13.4000			
	+474			+1.30498		+7.9841			

INTERPRETATION:

A good example of the equal value of the various tests, each showing about the same degree of severity. Note the nocturnal polyuria with a fixity of specific gravity in the day specimens, and a disturbance of the normal (inverse) ratio, existing between quantity and gravity. Decided nitrogen retention. The phenolsulphonophthalein output, and the retention of the various nitrogenous products in the blood, and the blood pressure, all indicate a **** degree of severity. Chronic interstitial nephritis with parenchymatous involvement also.

BLOOD Mg per 100 c.c.

N.P.N	Urea N.	Ur. Ac.	Sugar	H.I
97	60	10	83	7.35

Blood Pressure 190-230

Ambard's Constant
.312

Phenolsulphonophthalein
Drug Appeared in 16 min.
1st hour6.25 per cent.
2nd hour3.10 per cent.
Total9.35 per cent.

with their teeth than there are those who are drinking themselves into their graves. Heavy eating is far more responsible for it, in all probability, than drinking is. We may warn them especially of the heavy consumption of albuminous foods. If they are warned to chew their food thoroughly and to make it a regular habit to do so, they are not in much danger of overeating. Hasty eating is as harmful as overeating; the food putrefies and produces poisons which are far more hurtful than the excess food we have thoroughly digested. Let us not forget that some produce a vast amount of harmful albuminous waste by heavy work. I have seen

nephritic cases to degenerative changes that represent the end results of disease, we are certain to be in the position that the essayist assumes—we have no remedy. I take it, the fact can be assumed and established that pathology is nothing but physiology under adverse or perverted conditions. There is no such thing in my opinion as a bad kidney. There is not a kidney in a living man or woman in this audience that is not doing the very best it can with the material at hand, but it is simply a sifter. It is a separator and it has to do with the toxins of the body and the cause is back of and beyond the kidney. Pathological conditions in the body may enter

the kidney through the renal circulation, but they do not begin there. If we have a nervous system that supplies 100 per cent. of energy to the kidney, that kidney will have 100 per cent. of arterial blood. I believe it will then have 100 per cent. of function, and it will discharge the duties imposed upon it, provided other organs are doing their share. Many a patient is found to have symptoms of nephritis when the trouble is in the thyroid gland. It is one of the most important organs, and when it is defective, the work it should perform is thrown upon the kidney.

The skin is another organ which lends aid to all other organs, but when the skin fails to do its work, the extra work is thrown upon the kidney and I do not believe there is any organ in the body that is involved seriously alone, and that is why we meet these cases late in life and the death rate is so high.

The tenth dorsal vertebra supplies the spinal nerves to the kidneys, and when these are impinged by bone pressure at the spinal foramen giving exit to the nerves just mentioned, nephritis acute or chronic must follow when auto-toxemia, the basic condition of all diseases has arrived.

C. W. Dowden, (Closing): Just a word in regard to the hydrogen ion concentration of the blood. It is very easily determined and can be completed in five minutes. I believe it is only a question of a short time when this will be a routine procedure before every surgical operation.

A newer method and of probably greater value is the determination of the alkali reserve of the blood plasma also devised by Dr. Marriott of Baltimore. This test in connection with the phenolsulphonephthalein output gives us accurate evidence of an existing acidosis and a reliable index as to the time for operation.

As to Dr. Bronner's point with reference to operation upon the prostate: there has recently come to my notice a series of cases operated on in some of the eastern cities. Those cases with a high content of non-protein nitrogen and urea in the blood usually succumb to the operation. Similar cases that were treated until the nitrogenous products in the blood were normal, went on to an uneventful recovery after operation.

In reply to Dr. Anderson as to the cure of nephritis, I referred particularly to chronic interstitial nephritis. By cure I mean a restoration to normal and my pathology teaches me that a kidney lesion advanced to the point of chronic interstitial involvement is never restored to normal no matter what we do. We may relieve the symptoms, that kidney is never restored to normal.

As to the expenses of such laboratory procedures I wish to say, that we have always made that of secondary consideration both for our own patients as well as patients referred by other phy-

sicians. Poverty is no excuse for denying any patient the benefits coming from such investigations.

Again in reply to Dr. Anderson: one of the great advantages of such work is to enable us not to place burdensome restrictions upon our nephritic patients. In my opinion nothing can be more harmful than to upset the habits of a lifetime in a man who has reached the age of 50 or 60. It is not sound judgment to tell a man because he has a high blood pressure and albumin in his urine that he must stop eating red meats or worse still, to go on a strictly milk diet. High blood pressure is no contra-indication for the use of red meats unless it is accompanied by a retention of nitrogenous products in the blood and we have demonstrated that blood pressure will oftentimes be reduced on a diet rich in meats and proteins.

A great advantage of the work lies in the fact that we are enabled to determine accurately the body requirements and in this way to treat our patients in a manner that will relieve them of unnecessary and burdensome restrictions and at the same time place the least amount of work on the kidneys.

Chronic Duodenal Indigestion in Children.—By John Foote, M. D., Washington, D. C.—This condition is said to occur most frequently in children after the first year, and especially in those who have suffered from dietetic errors, usually with antecedent contagious diseases; or from prolonged intestinal infections, and this is fully covered by Foote in the December *International Clinics*. This form of indigestion seems to be accompanied by deficiency or pancreatic ferments, especially lipase. A mild duodenitis, which either passes up the pancreatic duct, or diminished hormone formation, seems responsible for the condition. Diminished bile production may also be a factor. Anemia, loss of weight and mental underdevelopment occur. Large pendulous abdomen are common. Bottle feeding has been employed. Fever may be encountered, vomiting almost never. The number of daily stools varies from 3 to 12. They are thin, contain some mucus and flakes of whitish material and have a very foul odor. They give an acid reaction and microscopically contain not only large quantities of fat soaps, but also a considerable amount of neutral fat but rarely starch granules. It is to be differentiated from mesenteric tuberculosis and acute duodenal indigestion. The treatment consists in reducing the food elements which have proven indigestible, namely, the fat, and stimulating enzyme production by the administration of hydrochloric acid and pancreatic ferments.

A PLEA FOR THE COMPULSORY EXAMINATION OF STUDENTS, BOARDING HOUSES AND COLLEGES.*

By V. A. STILLEY, Benton.

It occurred to me that a paper on this subject would not be amiss.

When we look forward to the preservation of future generations, we must perforce stop and consider the present. Our boys and girls of to-day will be the fathers and mothers of to-morrow, and since we have been making an effort in sanitation and prevention in other lines, I was encouraged to speak a few words on this, trusting that I may present it in such a way as to impress upon you its importance.

How many of us send our children away to schools and colleges without acquainting ourselves with the surroundings to which they may be subjected? How many of us inquire into the health of the boarding house keeper? The health of their families? The health of the party or parties occupying the rooms the previous year? And probably of more importance yet is the health of the one with whom they must share the room for the ensuing school months. How many of us send our children to the city schools and colleges and do not take the trouble to see if the rooms which they are to occupy have been thoroughly fumigated, cleaned and newly papered? Some rooms probably have had no paint or paper for years. Do we consider the ventilation and water supply? Some of us have sent strong, stalwart young men away to school, absolutely free from any tubercular taint, free from any hereditary disease of any nature, strong mentally, physically, and morally, who, contracting tuberculosis from his room mate, came back to us a physical wreck. The room mate must not be censured. He was advised to stay, that he could make it through and was advised by a professor of a great college to continue his studies. But what of the price? He paid for it with his life, with the life of his room mate, and with infecting others still.

Is it not time for us to wake up to these dangers? We are not blind, but sleeping. We have laws governing other things: Our children must be vaccinated before entering public schools; the drinking cup law; we are crying, "swat the fly"; great efforts are put forth for the "Prevention and Spread of Disease." "Prevention" is the key word of the medical profession. So why not legislate in this too? Preparedness is at present the slogan of the country. Rush orders for munitions may accomplish much in one day. But what of the men and women? We must get

them prepared before hand; and here again comes the plausibility of my plea for the compulsory physical examination of students before entering school, as a means to an end.

For a young man or woman to start his or her life work they must be physically strong, and should they choose the medical profession, you need not be told that every effort must be made to have them begin in first class condition, as our calling is perhaps after all physically the most exacting. The demands upon us are not only from sun to sun, but oft times whole days and nights of unceasing toil. If they are prepared something must be done.

The Metropolitan Life Insurance Company has given one hundred thousand dollars for the prevention of tuberculosis. A great corporation like that realizes the truth of that time-worn adage, "An ounce of prevention is worth a pound of cure."

A compulsory physical examination of each student on entrance and an examination once a week or once every two weeks at least; a compulsory examination of the boarding house keepers, and their families and premises every two weeks, would serve properly to begin a means of systematic prevention. Have the boarding house keeper furnish a list of the boarders to the registrar or secretary of the college, and preserve a record of the roomers the previous year. Have the rooms thoroughly fumigated, repapered or repainted as the occasion demands, and if the boarding house keeper refuses to do this then stop the students from boarding at that place. Have competent physicians to do these examinations. Let the board of directors of the schools and colleges add a competent physician to their school board to see that this work is thoroughly done, and let the students pay for his services. The sum per capita for small schools would not be over ten dollars and for the larger ones less, or if the average school could not pay a competent physician let two or three schools supply one man.

If this rule of compulsory examination were rigidly enforced at the beginning of the schools it would, I am sure, eliminate to a great extent that dreadful disease, consumption.

One state in Australia demands a physical examination of all immigrants. They must be examined by an official Australian medical officer and to be free of tuberculosis if they are allowed to remain outside of a hospital.

I had the pleasure of reading that splendid symposium on tuberculosis by Drs. Thompson, Frazer, Lapham, Von Ruck, and Sloan in the *Southern Medical Journal* and especially did I like Dr. Thompson's article on the early recognition of tuberculosis. He says that to be of the great service that we should

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

be, is to recognize the disease early, and this is one of the reasons for the plea for the compulsory examination of students upon entrance at college. Be as careful as to their physical self as to their literary attainments; for if we have a standard of mental efficiency why not physical?

In a number of schools and colleges athletics are in the curriculum. We must pay a small fee, and each student must become a member of the Y. M. C. A., whose hall contains all sorts of apparatus of physical exercise. This I most heartily endorse and, I am glad to do so that my boy and your boy may enjoy the privileges of necessary exercise. Just a little more added to this and placed in the proper channel would be one more step toward his health.

When we consider the vast number of our people who are stamped with tuberculosis we are alarmed for those who are free. We are proud of the work that has been done. Let us not grow faint. I trust that we will not become discouraged over any possible failure we have made in the past as it is by steadfast drilling into the rock of the world that we are able to bring up drafts which we can pass to others.

Life is a trust and not a possession, and in a great measure we are stewards and responsible for the health of our nation. Receiving a trust and rendering an account are inseparable. Responsibility and accountability are twin brothers.

Gentlemen, the eyes of the State, the eyes of the world turn to the medical profession for help on the question of health. We know the abyss over which they are hanging.

Can we be true to our people? Can we be true to our families, and can we, as loyal followers of Christ, be true to Him unless we send out the warning that they may flee from these dangers?

I thank you.

DISCUSSION.

Arthur T. McCormack, Bowling Green: This paper is characteristic of Dr. Stilley who, when he reads a paper or makes a statement, is always thoughtful. This paper to my mind ranks with the one of Dr. Stevens, in that he has offered one of the most important suggestions that has been made at this meeting. It goes right at the crux of the problem that confronts us in regard to the public health. First, we have to start in the common school with the training of the child. We have to do things and let the child act in his small way. The big things are going to come later in life, but when he goes to college you and I have to tell him and show him the things he has been trained to do and to think the same as we are thinking. If we do not, we are an obsolete profession, and the children, while growing into

manhood, will not progress but will stand still, being as ignorant of health matters as their forbears are. They need our advice; they need our encouragement to forge ahead.

A great philanthropist of Louisville stood before a magnificent audience in my county several years ago and asked how many men were present who had fed cattle or hogs. Every hand went up almost all over the house. He said, "Stand up." They all stood. He said, "I want to ask every man, who has seen the cattle or hogs he has fed within the last 48 hours, who has seen the food, the way they have been cared for, the stabling, the housing, and so forth, to hold his hand up while standing?" Every man's hand went up with one or two exceptions. He said, "I want to ask all the men standing and all others to sit down. Now how many of you have been in the schools in which your children go within a year, or within two years?" Three men stood up, and on investigation it was found they were school trustees and were paid for going.

Now, when you first think of that it is difficult for you to realize that we are neglecting the most important element in our community, and are taking care of hogs and cattle that are going to the slaughter house to put money into our pockets. In just exactly the same way we send students to our great colleges and bring them up. One college in Kentucky already has done much towards the solution of these progressive problems of citizenship, namely, Berea, one of the greatest, if not the greatest, institutions we have in the State. We feel shocked that it receives no aid from our citizenship, and the institutions aided by our citizenship are not in the same class with it. It does vastly more good than any state university until they are all born over again or recast. Down there they are teaching these things, and that is the reason we are getting better health conditions in these mountainous districts and isolated regions of the State. The environment of the people has improved materially. If we could for the first two years arrive at or accomplish the things Dr. Stilley is talking about doing, there would be no difficulty about increasing longevity and going back to Biblical times to get instances for dates on our tombstones, instead of having the short span of years we now have. The cigarette smoker, the riffraff, the degenerate element, would be eliminated.

The sort of thing Dr. Stilley has been talking about can be started in the common schools and go through high schools and follow our boys and girls into boarding schools and colleges up to the time they are turned out.

The Catholic Church has a world wide organization that has done for religion what we would have all who teach children to do for health. If you have a child and train him during the formative period, anybody can have him afterwards. That is the reason they have their wonderful system. The reason we fail is because we do not train our children when young and we train them

less when they are grown. We do very little good as a result of it. It is the reason we have so many schisms and mixups as we have. It is the reason we have so much of the ill health we have. We train our children to do little sums of arithmetic and let them die hopelessly and needlessly. We take the flower of our country and let them die of diseases that are preventable—conditions that can be corrected.

Think of a thing that happened in Mason County, Miss Yaney, the County Superintendent, went to a public school. Just before one of the children with an acute coryza had sneezed, and the all-time health officer of the school arrested the boy for **sneezing at large** without putting a handkerchief over his mouth because he sprayed germs over the schoolroom. The teacher was the judge and six students were the jury. They had a trial, with an attorney to represent each side. At the trial, after discussing the matter, that boy was assigned the work of pouring water into the Kentucky sanitary privy each morning for a month for sneezing without putting a handkerchief or paper over his mouth to catch the spray of germs he was throwing out. Every school in that county has a pupil who is an all-time health officer.

You can get an idea of what the health officer will have to do when such pupils as that have grown up and become citizens of the county. We have not yet even thought of it.

I went to Louisville the other day, as many of you did, to attend the State Fair. I looked down in one of the long pavillions at the hogs, and there was a man for each two hogs. They had their hair curled; they were combed; they had distilled water to drink; they fed them with boxes of breakfast food in order to get a premium for having the finest hogs. I went over to the cattle barns and there was one man for each cow. Their hair was curled with crimping irons. Every little detail in connection with caring for cows was looked after. On the other hand, at the encampment of the Boys' Corn and Pig Clubs, about two hundred selected boys from the farming communities of the State were under the charge of two demonstrators and were fed at cheap restaurants, the chief consideration being the price per feed rather than the kind. What does all this mean? It means that our boys and girls are worth more millions of dollars than Rockefeller or anybody else can command, and just as soon as we realize that paltry dollars represented in stock is worth nothing as compared with our children, just so soon will we all help to solve the problems which Dr. Stilley has presented to us so well this morning. (Applause.)

Bob Overhy, La Center: In our county we have had much trouble with our county officials in dealing with health problems and eliminating quacks.

Last week a doctor had a case of diphtheria, he called for the county health officer to come and see the case, and assist him in overcoming some objections to the necessary restrictions in con-

fining the case; the judge refused to send the health officer to this case.

In my county we had last year a chiropractic whom we tried to eliminate, and succeeded finally in doing so. I wrote Dr. McCormack about it, he mailed me a copy of the letter he wrote our county attorney, telling him to have this fellow arrested. This fellow agreed to leave the county, but instead he went to one edge of McCracken county continued to treat his Ballard county patients. In the meantime there was being gathered some strong evidence from some of his dissatisfied patients in sufficient quantities to convict his dead easy.

On the day of the trial this fellow had arrayed in the court room such a bunch of his followers that testified in such praise of this wonderful healing power, that before the Commonwealth could put their evidence before the jury, the tears were so filling the eyes of his following at the thought of their prophet being persecuted in such a way that the judge (who was a patient of this fresh from the clouds) extended his hand and bidding him God's speed gave preematory instructions to turn the defendant loose. This developed into the biggest experience and handshaking meeting that has been pulled off in these parts in many decades.

What is the remedy for such gross insult to progress from officials? I was reliably informed that the wife of another county official was a patient of his and was there to defend this Just from the Clouds. We have since had a faith cure who cut some ice, too, for two or three months, but he soon played out and ceased to be without repeating the episode that took place at our county seat where justice is put on cold storage when it should serve to defend at least the ignorant from such blood suckers.

In line with what the doctor has said, we have instituted what we call community meetings the past two years in our school, and I want to tell you they have been great factors for good, and the cooperation upon the part of patrons in their attendance is more surprising. It has grown from an ordinary gathering to crowded house every time, unless weather conditions are very unfavorable. These community meetings have developed a most wonderful school interest that has not always existed, besides the great good which results from the getting together of any community for common interests.

In my feeble way I have given several talks before the school which have seemingly done much good; mostly along the line of prevention. One subject was bad colds, their prevention and some simple treatment that could be used at home; especially emphasizing the things to do to prevent them. Another subject was pyorrhea, the prevention of tuberculosis. I find the student body wide awake and very much receptive to suggestions on these conditions.

I have been greatly pleased and encouraged to

see the response of the pupils, large and small, who come to the office after these talks, especially my subject on sore throat, emphasizing the importance of early inspection. Have been asked to give some talks to some of the schools in the county and shall do so to the best of my ability.

V. A. Stilley, (Closing): I have only a word or two to say. I made a suggestion to a member of the faculty of a large college that they appoint a competent man on their board to do this work, and he said he had not thought of it. I asked him if he thought he could get a thoroughly competent man for two thousand dollars per year and to devote his entire time to this work, and he said that he thought he could, and in a school of the size of this college of five hundred students or more the cost would be less than five dollars per student, and from the way he talked to me I thought he would take it up with the faculty. It occurs to me that is practicable, I do not see why it should not be because if we have young men examined by a competent man to see whether they are physically able to enter school for a four year course, and have their boarding houses looked after, and have them examined every two weeks, much could be accomplished. Let him have charge of this phase of the work and see that his instructions are carried out thoroughly. It seems to me we ought to be able to do something in that line.

TOXIC-EXHAUSTIVE PSYCHOSES.*

By W. E. GARDNER, Louisville

Under this heading I shall endeavor to give only a brief general survey of some of those conditions which come under the classification of confusional insanity, believing that a great many such cases are often overlooked, and mistaken for mania, melancholia or dementia praecox, and on account of this, unfavorable prognoses are sometimes given when the chances for recovery, though somewhat delayed, are really favorable.

There is such a similarity of symptoms in all exhaustion and intoxication psychoses, that the consideration of an average case of toxic psychosis, alone, will, in a fair way, cover all that is, ordinarily, included under the general head of confusional insanity.

The mental disorders here described arise in predisposed individuals as a result of severe intoxication of the cerebral cortex by alcohol, belladonna, cocaine, chloral, Indian hemp, and other drugs; by the toxins of certain fevers, such as erysipelas, influenza, rheumatism, typhoid, scarlet fever, and septiceimia; by products of fatigue which are created by excessive mental or physical exertion, worry, anxiety and fright, or as the result of malnutrition of the cortex from inanition,

anaemia or profuse hemorrhage. Childbirth is a frequent cause of the disorder, since it may lead to exhaustion or hemorrhage, even if there be no septiceimia; the psychosis may be produced by prolonged lactation. This condition sometimes follows a surgical operation, and is then spoken of as a post operative psychosis.

I am sorry to say that no specific organism has been discovered which is, alone, responsible for the train of symptoms belonging to this psychosis.

These patients always look ill; their complexion is pale and muddy. In depressed cases the skin may be abnormally dry; in excited cases it may be greasy. The general nutrition is poor, and the temperature is, often, subnormal. The arterial tension is, usually, low, unless there be a nephritis, or high tension due to some other condition producing arterial changes. Pulse rate may be only slightly increased, if at all. The urine is scanty, of high specific gravity, and often contains a trace of albumin.

There is often little or no diminution of muscular power, but there may be tremor. The superficial reflexes are, usually, normal; the tendon reflexes are increased; the organic reflexes are unaffected. Pupils may be dilated, but react to light and accommodation, unless there be a coincident specific condition of the brain or cord, in which event there might be a stiff pupil.

Peripheral analgesia is almost invariably present during some stage of the disease, especially, the earlier stages, and is said to be one of the cardinal symptoms of this disorder. There may be some contraction of the visual field, without organic changes in the retina, as is sometimes seen in hysteria.

MENTAL SYMPTOMS.

There is great disturbance of the functions of perception and recognition. Imperception is said to occur. The patient may be unable to understand what a picture portrays, or the meaning of a more or less complex sentence. There is ideational inertia. If the patient be shown a series of objects, he may name the first one correctly, and then give all the others the same name. Hallucinations are a cardinal symptom in this disorder; sometimes of all the special senses, but more particularly that of hearing, as opposed to the predominating visual hallucination in acute alcoholic delirium. The patients do not understand the nature of their surroundings, and are often disorientated for time, place and person. They do not know where they are, who the people are about them, and are absolutely lost as to time, if disorientation be complete. The memory upon which orientation depends is greatly impaired, as well as the memory for ordinary

*Read before the Jefferson County Medical Society.

events. Patients have no idea how long they have been in the hospital, and married women will often answer to their maiden name only. Upon recovery it is often found that a great part of the patient's illness is forgotten.

There is often a disorder of judgment and delusions arise. The patient may refuse to accept the reality of things, and believe that he or members of his family are being tortured. These delusions are usually dependent upon the auditory hallucinations, for the patient hears these imaginary voices or outcries, which are in reality a reflection or an echo of his own disordered mental processes, and he believes what he hears. There may, on the other hand, be expansive delusions of a more or less pleasing character, whereupon the patient will smile and give evidences of a state of well being. The emotional attitude differs in separate cases.

These patients are, usually, depressed. Some are cheerful, or even hilarious. There is often irritability and outbursts of temper. Some may be stuporous and utterly indifferent.

There is loss of control of the instincts, and patients may be more or less erotic, or resort to masturbation. The hallucinations are often of an erotic character. There may be destructiveness, and bedding and clothing are often torn to pieces. Patients may even be untidy.

There is, usually, great motor restlessness, in the early stages of the disease, so much so, at times, that it is with great difficulty that such cases can be cared for without danger to the patient or those about him. A great many will resist all attention, refuse food, and sometimes have to be tube fed. The movements of the body are, usually, slow and performed without definite aim, thus differing from the characteristic movements of acute mania, which are usually quick and performed for some mischievous purpose. Voluntary attention is impossible, but instinctive attention can be aroused by holding a watch or bunch of keys before the patient. On account of lack of voluntary attention, the speech is incoherent; in some cases it may consist entirely of disjointed words and phrases. Noisiness and shouting are, as a rule, not present. Sleep is poor and what does occur is usually in the early hours of the night.

The German, English and American psychiatrists all agree that the average duration of the acute stage of such a psychosis is about three months, at the end of which time it is found that sleep has improved under treatment and that the analgesia has disappeared. During this time perception improves, the patient gradually becomes orientated, and the hallucinations and delusions disappear. Emotional disturbances may still occur, and the patient is easily confused, and may be inco-

herent in conversation. These latter symptoms disappear, however, in a short time, as the patient gains strength and begins to put on flesh. Even during convalescence fatigue is easily produced, and undue exercise is liable to bring on a relapse.

There may be different varieties of the psychosis according to the symptoms that predominate, and we may thus have the following types:

1. The depressive form, with motor restlessness, which is the most common.

2. The excited form with happiness, hilarity, motor excitement, and sometimes exaltation.

3. The stuporous form in which the patient remains quiet and rigid, all the muscles of the trunk and limbs being affected.

4. Collapse delirium, which is of short duration, usually fatal, running a course of about two weeks, sometimes called delirium grave or acute delirious mania.

5. The katatonic form closely resembling the katatonic form of dementia praecox. Such patients may even have negativism, waxy flexibility, antics, stereotyped movements and verbigeration, like dementia praecox.

6. There may be an intermittent form in which the patient suffers many attacks during his life, each attack leaving him more enfeebled mentally, until he finally becomes more or less demented.

In the matter of diagnosis the above varieties are to be distinguished from mania, melancholia, anergic stupor and dementia praecox, by the invariable presence of disturbances of perception, by disorientation, and impaired memory. The presence of analgesia always argues for confusional insanity, and the auditory hallucinations are always significant. Certain epileptic states resembling acute confusion can usually be eliminated by the history of the case.

Prognosis. The majority of these patients make a fairly complete recovery in four to six months. Some go longer, and about ten per cent remain permanently demented. The per cent of deaths is not high, except in the collapse delirium form, which is almost invariably fatal.

Pathology. There are no marked gross pathological changes to be seen in the cortex, but since it is known that exhaustion is a morbid process taking place in the cerebral cortex, then in these cases the amount of consumption must exceed that of repair. Pathologists tell us that there is a deficiency of nutrient pabulum, which is said to be the intracellular trophoplasm. Histological examination of the brains of such patients shows a disintegration of the trophoplasm of the cortical neurons.

Stoddard of the Bethlem Royal Hospital, England, suggests that the mechanism under-

lying the cardinal symptoms of this psychosis is an increase of the synaptic resistance between the peripheral and more central neurons throughout the nervous system, and which he suggests by the experiments of Sherrington upon the integrity of the nervous system, would account for the symptoms of analgesia, hallucination, and imperception. In other words that the resistance is at the synapses, or little twigs along the dendrites, and not a block in the neuron, itself.

Treatment. Cerebral activity must be reduced to a minimum, and the supply of nutriment raised to a maximum. The patient must have plenty of rest and good nourishing food. He should be kept in bed during the greater part of his illness, and this is, sometimes, very difficult to do, not only on his own account but upon the insistence of his family or friends that he should be up and about, taking exercise or getting the "fresh air," not realizing that such patients are acutely ill, and should be treated accordingly.

Frequent prolonged baths are very effective in producing a habit of quietude and are a sheet anchor in such cases. It is usually necessary to use some drugs to promote sleep and reduce motor excitement, paraldehyde and amylene hydrate are said to be effective, but I have found that the simple bromides in full doses usually answer my purpose, along with the baths. Sulphonal sometimes acts well, but one must be guarded in its use, if it has to be given continuously, as there may be a cumulative effect, and symptoms of sulphonal poisoning. I do not like the use of hyoscine in these cases, except in very small doses, and would not use morphine unless there be temporary outbursts of very great violence.

It must be remembered that such patients are very susceptible to fatigue, during convalescence, and they should not get up too soon, lest there be a relapse. Most cases should have at least two months rest in bed. Restraint should be avoided as far as possible, and if in very violent cases it should be necessary, the use of a restraining sheet is effective and more humane and less irritating to the patient than being held in bed by nurses or attendants. Any restraint of such cases usually frightens the patient and aggravates his condition, especially if he have delusions of persecution.

The diet should consist of three or four pints of milk, to which cream has been added, and four to six eggs, daily. Eggs may be given softboiled, poached, raw in sherry, or in the form of custard. Beef tea and broth may be given between meals. Tube feeding is often necessary, and will, sometimes, save the patient's life. Solid food may be given, as the appetite improves. Alcohol in the form of

brandy, port, or sherry may be used. It not only stimulates, but promotes sleep and improves the appetite.

Iron in some form should be given as soon as possible, as there is a tendency to chlorosis in such cases. Constipation should be treated by frequent and large doses of castor oil, with an occasional dose of compound cathartic pills. Mineral oil seems too slow and unreliable in these cases, until convalescence has begun, when it may be used to an advantage.

In the event of threatened collapse, copious intravenous injections of normal saline solution have been recommended.

Massage may be used for patients who are reasonably quiet, and after the general nutrition is sufficiently restored.

An improvement in the mental symptoms is said to have been hastened by the use of small doses of strychnia, given hypodermatically, three times a day, by its influence in lowering the synaptic resistance.

NONPHARMICAL REMEDIES TO INCREASE EFFICIENCY FOLLOWING INJURY.*

JNO. J. MOREN, Louisville.

Therapeutic questions are not presented before this society as frequent as they might be, but the infrequency of such is no apology for my subject. I believe that nonpharmaceutical therapeutics is a question to be seriously considered by the American doctor, not that we have failed to investigate their value and know something about their usefulness; but because nations and trades are demanding efficiency in methods and men and the medical profession will be required to make the injured workman as proficient in as short a time as is possible, considering the damage done to the individual. Any method or means which offers any help to attain proficiency must be considered, studied and applied, if we expect to do that which is demanded of us.

I appreciate that nonpharmaceutical therapeutics is not a very popular one. Physical methods have been questioned, doubted and discarded by many of our professional men. They are too frequently regarded as methods of the charlatan. They were not enthusiastically considered by the Board of one hundred college men who adopted a curriculum for medical colleges. Only 31 hours were allotted for the whole list; including massage, electricity, mechano-therapy, climate, dietetics, hydrotherapy.

It will be impossible to give in detail the merits or demerits of each measure. The subject will be handled in a general way, calling

*Read before the Jefferson County Medical Society.

attention to what is being done in Europe and we will leave the special advantages to your consideration for future discussion.

The modern conception of disease based upon pathology, bacteriology, etc., tend to make us doubtful of the curative proportions of drugs and hope for the specific, antitoxin or vaccine that the disease process may be checked before pathological changes occur. This can apply to the acute diseases, but by far the greatest per cent of cases can be classed as tending to chronicity and not respond to specifics as they do in acute cases. It is this large class of physical injuries, chronic diseases, etc., that nonpharmical agents are best applied.

Many of the cases come to us, asking, what can be done? They have tried various medicines without results. They want to be made more useful. As McCrudden says, "It is not anatomical integrity that the patient demands; but functional efficiency."

If a hand is injured and a complete restoration of function cannot be had, can you, by any method or means improve that function that the workman can earn his living.

In the great struggle now being waged in Europe, the slogan, is "Men" able-bodied men and the warring nations are using physical measures with good results. The nations that were most lacking in the knowledge and application of these remedies, are now exerting their best efforts to provide this form of treatment and get their men back to the trenches. If such measures are so essential in times of war, are they not worthy of a more conscientious application in the battle of business where the demand is for efficient men, where it is essential to be able to make a living and lessen the burden of the country as a whole.

In case we were engaged in a great struggle, as is now raging in Europe, how many of our doctors would be able to give intelligent instructions about these measures.

I know from my personal experience in a certain line of work, that doctors treat a fracture with good results as far as union of bone is concerned; but how about the nerves, muscles, and joints. The question arises: Would the application of physical measures at the proper time aid the repair of the muscle or nerve and prevent adhesions from occurring about the joints?

Should my remarks upon this subject do nothing more than cause army doctors who are doing general work, to ask themselves this question,—my efforts have been worth while.

WHAT IS BEING DONE IN EUROPE.

Reports from the central powers are uncertain, however, it has been stated, that a large per cent of the wounded are made able for

service. It is a known fact that Germany and Austria were well prepared in the way of sanatoriums where physical measures were applied. It is also a fact that every year groups of doctors visited these various baths or sanatoriums. These coupled with the national proficiency gave a good working knowledge to these procedures.

It is only natural to presume that they have made use of this preparedness.

France was not so well provided; but has established hospitals and is doing some great work.

In January, 1915, a committee from the Section of Balneology and Climatology, of the Royal Society of Medicine, visited the Hospital, Grand Palais, in Paris which is devoted to the treatment of wounded and disabled soldiers by physical measures.

The following extract from their report (*London Lancet*, Feb. 5, 1916) will give you an idea of this report.

The departments at the Grand Palais,—London hot air baths (thermotherapy), ranging in temperature from 50 degrees to 80 degrees C., and of 15 to 20 minutes' duration, are often used for injuries of the shoulder, as a first or preparatory treatment. In cases of complicated fracture, with chronic periostitis and pain on pressure or movement, it is claimed that the heat in this form promotes absorption of inflammatory products, and so prepares the joint for mobilization. Electric radiation baths are also used in the same class of cases.

Local hydrological treatment is employed in a special manner for wounded limbs, especially for trophic lesions resulting from prolonged suppuration, chronic oedemas, swelling of the periarticular tissues, and fractures of the articular ends of bones, and painful and adherent cicatrices. Such applications prepare the way for massage and movements, and render them easier and less painful. The arm or leg is placed in a local bath of running water *Balnettion a'la' eau courante*. The temperature is hyperthermal, ranging from 40 degrees to 46 degrees C., and gradually increasing and the duration from 20 to 30 minutes. The current is rotary, of a strength that can be varied at will, and it can also be directed to any part of the limb. Such applications produce extreme vaso-dilation and increased arterial circulation. In addition to these familiar effects, which are well seen in the treatment of stiffness, and fatigue, fever by hyperthermal baths, it is believed that "whirl baths" as they may be called have a special action due to the movement of the water. The hydro-massage, added to their high temperature, appears to have a marked sedative effect in relieving pain and also promoted the lymph circulation and diminishes

the effusions and swellings of soft parts. This form of bath, therefore accelerates the retrogression of subinflammatory conditions. The same effects are not observed from baths of similar temperature in still water. Whirl baths are now always given before manual or mechanical treatment, and increasing importance is attached to them. At the Annexe in five months, 2124 preparatory treatments in *cau courante* were given.

Massage and mobilization. —After the *cau courante* bath, the limb in most cases, but not in all, is subjected to massage. Manual treatment is usually given before mechanical, especially short applications of vibratory massage and is always gentle and progressive in character. The muscular spasm and stiffness of the injured limb having been allowed by the preparatory treatment just described, and the circulation being increased and accelerated, massage can now be administered without pain, and promotes the removal of deposits and effusions and the nutrition of wasted muscles. The first movement (mobilization of joints or muscles) is nearly or entirely passive. This may be effected either by the hand or by means of apparatus, and in either case is exactly adapted to the particular disablement (defect of flexion, extension, rotation, supination, etc.) While the hand is held to be competent for a large number of cases there seems to be considerable scope for mechanical appliances in military practice. Moreover, the apparatus is capable of measuring the amplitude of movements and the resistance overcome, as well as of recording the results of treatment. Where the applications are given daily, for many weeks, this is often a matter of importance. The object of mechanotherapy is stated by the French physicians to be not only the mobilization of joints but the re-education of muscular movements. It is held to be beneficial after wounds of all kinds, whether articular, periarticular or muscular, or lesions of nerves. In each case the prescription is detailed and defined and gives the registered number of the apparatus and the duration and frequency of treatment. The intention is to give the maximum of movement combined with the minimum of fatigue. The movements given with heavy weights do not give the best results. It is important to determine the order in which the several apparatus should be used, and many are often used in succession. Fatigue lessens the good results, and the application should be discontinued at the point when movement becomes painful. Where the muscle is contracted, pain often accompanies its slightest movement, and patience and the good will of the wounded are necessary. It is found that muscular weakness, whether functional or resulting from articular or osse-

ous lesions is equally benefited by gradual mobilization. The ideal is the complete re-education of lost movements and restoration of muscular tone and contractility.

Electricity. The department of the electrical treatment of military cases is the most important centre of electrotherapy in Paris, both as regards the installation and the number of wounded who are treated. It has a capacity for 800 treatments per day. In each case a complete electrodiagnostic examination is made, to which great importance is rightly attached. The majority of cases dealt with are wounds of nerves and muscles, neuritis, neuralgia, paralysis and traumatic neuroses. The electrical phenomena following upon division of nerves and their stature, have been especially studied.

Results obtained in relief of disablement. The physical methods above described are found to be applicable and to produce "appreciable results," in all sequelae of wounds. For many cases, a complete restoration of function has been obtained, and where this is impossible the figure of incapacity has been obtained, and where this is impossible the figure of incapacity has been considerably reduced, indicating a partial cure of disablement and a substantial economy to the State. Moreover, experience shows that the results are always better in recent cases than in those that have waited long for treatment. The cases completely cured are stated to form 51 per cent of the whole number treated. "The statistics," says Dr. Quiserne, Medical Director of the Annexe in the Rue d' Artoid, "show more remarkably than any report, the necessity of furnishing to the wounded a rapid and complete method of cure by the rational and systematic employment of physical methods."

The authors of the report are informed in one month alone (October, 1915) the number of disabled men returned to active service was 452; that this would effect a saving to the State on account of pensions of about 80,000 pounds, and that on the total number of wounded, the average reduction in capacity was more than 20 per cent. The objects that have inspired the founders of this great hospital for physical treatment in Paris as follows:

1. To prevent the after effects of wounds.
2. To restore useful soldiers to the army in the shortest possible time.
3. For men who cannot be completely cured to limit the disablement of limbs and so as to preserve as far as may be their capacity for work in the future.
4. At the same time to effect an economy to the State by diminishing the cost of pensions.

England was somewhat slow in establishing

special hospitals, however, it should be said to the credit of England that she had many institutions which had been practicing this method, but was not so publicly known as the European resorts.

Maekenzie made a recent report to the Royal Society of Medicine, which showed that England was doing heroic work for these unfortunate men.

The reports are scarce and the time too short to give results, but one English resort stated, that of all the cases treated in one hospital, 80 per cent. were returned in the trenches, 15 per cent. to auxiliary service and 5 per cent. discharged.

I cannot state the type of cases which were received in this hospital. The average time spent in these depots is 2 1-2 to 3 months.

The medical literature comments on the French method of "combined physical treatment," this is only a procedure in which they rely upon the combined effects of all non-pharmical remedies as massage, electricity, mechanotherapy, re-education, hydrotherapy, etc.

In some instances, electricity, baths or massage do not give the results as when combined.

This is no new method, it is only taking advantage of the effect of several remedies. It has been suggested by other men, but has never been applied as systematically as is being done in France.

The following procedure seems to be adopted by the French:

1. A preparatory treatment by heat, moist or dry, radiating or non-radiating, followed by,
2. Massage, electricity, mechano-therapy or passive motion, or,
3. By re-educating exercises or movements.

It is a physiological fact that heat or elevation of temperature of a muscle favors activity. Locally applied it stimulates circulation, dilates surface capillaries.

The French are using what is called a whirlpool bath. This seems to be a metal device of sufficient size to place one or both extremities and the water is agitated or whirled by several jets or sprays or by a turbine and the water is in motion. The advantage of this is, that a higher temperature can be endured and in addition you have the effect of the energy from the force of the moving water.

Lovett says, "that massage gives the best results following the application of heat; hence, the recommendation of massage or passive motion during or following a bath in the treatment of infantile paralysis.

It seems rational that after the parts have been influenced by heat, that the massage would have a more profound effect upon the

circulation of blood and lymph which has all to do with absorption and nutrition.

Some one has said, "that the best results from electricity can be obtained following massage. That a much less current is required to produce muscular contraction.

One of the most important effects of the current is to produce muscular contraction, a very desirable effect to prevent degeneration of muscle and adhesions about the tendons. This is especially true in paralysis following nerve injury.

After the pain and tenderness has subsided and at a time when slight, gentle movements are desired, the French make use of the Zander appliances. The various devices are so constructed that a limited motion can be made upon almost any part desired. It can be increased as the patient improves. However, many prefer the passive motions or Swedish movements given by a proper person. This school believes that the human hand could better judge the amount of resistance to offer in each individual case.

The English are not using the Zander machines as much as the French; but in their convalescent depots, they are making use of less expensive but quite ingenious devices which replace the expensive Zander machines. Furthermore, England is educating men to become competent masseurs. From reports, I judge that France uses the mechanical massage from lack of sufficient masseurs.

After the patient has recovered from the influence or the reaction to injury and regained some movement in the effected parts, the advantage of re-educating movements or exercise are to be utilized.

It has been said, that the American doctors strive for quick results. This is not a serious fault; but the trend of medical teachings today, is to watch the end results---the "follow up" or after care. There is no doubt on account of the slow, tedious and trying procedures of re-educative exercises, the patient is told to "exercise the arm" leaving the selection of the movement, the effect and time to the patient. How many are really capable of doing this?

I have heard or read that a monkey will recover better functional use after injury than man. It might be said that their life depends upon action.

I heard Prof. Halleck, deliver a talk on the psychology of action. He said, "there was two ways to produce action, by a brick or an idea."

The driving force of an idea to use the hand, means an impulse going to the muscles to contract and if persistently repeated that contraction is going to improve in proportion to the capability of the muscle to develop and

produce a motion in keeping with its strength and resistance offered.

Each of you have in mind a patient who by his own efforts recovered a remarkable use of hand or extremity. If a few can make these recoveries, is it not possible to obtain more similar results. We should offer them encouragement to use this idea to move the hand while we use the "brick" which is only a peripheral statement, in the form of heat, massage, electricity, etc., to arouse and correct the abnormal part.

CLASSES OF CASES TREATED.

You will recall that the Grand Palais Hospital was established for wounded and disabled soldiers. This will include a large class of cases. I would think that they treat any case that would offer hopes of being benefited.

In England, in addition to injuries to joints, muscles, nerves, etc., they are treating frost bites, shell shock, soldier's heart, etc., by physical methods.

Mackenzie's article is most interesting and gives a good idea of their work.

Whether the results following this treatment will prove worth while, remains to be seen; but when one thinks of the unsightly bad results, as contracted scar tissue, wasted muscles, stiff joints, useless extremities following injury, we naturally wish for some treatment to help them.

The reports indicate that such results are being minimized.

We recognize the therapeutic effect and value of all these remedies. Some hold a higher opinion than others. Some claim entirely too much to be accepted by the practical physician; nevertheless, they are measures which have some value and must be considered. Whether they can be applied in every-day practice, is a question.

It would be unbecoming of me to attempt to say when the surgeon should begin the use of physical measures. Active inflammation or reaction to injury, preclude the use of any measure which might aggravate or delay the healing process. Surgical judgment and experience decides the time these remedies should be used.

Every day we hear of cases treated by various cults that have been benefited by manipulations. We recognize the positions of non-pharmaceutical measures in our armamentarium and we should be more familiar with their applications. It is a question that rests wholly with the doctor whose requirements to practice medicine are being raised and from whom the public is demanding more.

All struggles have their lessons and it is my belief, that in the future we will know what real results can be accomplished by careful watching, treating and re-educating the injured.

DISCUSSION.

Stuart Graves: Dr. Moren submitted a subject so comprehensive that it was difficult to decide just how he wished to have it treated but, after reading his paper a second time, it seemed that he desired a discussion of the pathology of the lesions of the muscles, tendons, bones and joints following traumatic or mechanical injury principally and thermal and chemical injury incidentally, the last of bacterial origin. Even this more limited subject offers so many ramifications that it can be handled only in a general way.

Our comprehension of the pathology of any lesion is limited largely by our understanding of the principles of inflammation and our ability to apply those principles to special kinds of injury done to special kinds of tissues. Inflammation, in a broad sense, is the reaction of a living organism to an injury. It is a process tending toward removal or counteraction of the injurious agent and toward repair of the injury produced. In man the function of counteracting injurious agents is delegated largely to the fluid and cellular elements of the blood. We must study inflammation logically by considering, first, the injurious agent; second, the injury done to the cells and intercellular substances; third, the reaction to the injurious agent or its products and to the injury.

The injurious agent may be mechanical, physical or chemical; the last of two different classes, the one comprising acids, alkalies and inorganic poisons, the other principally toxins derived from infectious agents, especially bacteria.

The injury produced may be evidenced in three ways: Chemically, by changes in cellular metabolism, including secretion and excretion; morphologically, by retrograde changes on the part of the cells immediately affected; physiologically, by alteration or impairment of functional activity. It is this physiological evidence of inflammation, this alteration or impairment of function which presumably interests you chiefly. We shall proceed as quickly as possible to try to point out how this is caused.

In the first place, to consistently follow our scheme, we must consider the injurious agent. In war or in peace it may be mechanical; it may be a fragment of an exploding shell or a fall upon an icy pavement, a brick tumbling from a building or a bullet from a homicide's revolver. Again it may be physical; it may be the frost bite in the European trenches or the sun stroke on the Mexican border or the electric shock in a high power transmission wire or the X-ray used by an unskilled therapist. Again it may be chemical; it may be the carbolic acid drunk by the derelict tired of life, or the toxin secreted by the tetanus bacillus on the battle field.

In the second place we must consider the injury produced. This may vary in the time of its production from the immediate suspension of life by

a whiff of hydrocyanic acid or the instantaneous removal of an arm by a shell to the slow, but progressive advancement of an arterio-sclerotic process brought about by the high pressure of the life of the modern business man who may be exemplary in his personal habits. It may be entirely localized as in a bayonet thrust or it may involve practically every structure in the body as in the gradual retrograde process of tuberculosis or syphilis.

In the third place we must consider the reaction of the body to the injurious agent or its products and to the injury. We now come to the meat of the subject. As previously stated, the reaction has a two-fold function; first, to get rid of the injurious agent, if still present, or to neutralize its action so that it is no longer injurious, and second, to repair the injury, that is, to remove and, so far as possible, repair the necrotic cells. There ensues first congestion followed by stasis, then exudation of lymph from which fibrin is formed; the emigration of leucocytes to digest soluble material with the aid of their proteolytic ferments, to remove part by phagocytic action, to engulf bacteria and to produce antitoxins: diapedesis or hemorrhage of red blood corpuscles which is in no way a constructive part of the process; and, in mucous membranes, an excessive secretion of mucus. In this way arise the five forms of inflammatory exudate, serous, fibrinous, purulent, hemorrhagic, catarrhal; also the four cardinal signs of inflammation, swelling from dilatation of vessels and exudation and hemorrhage, redness from the congestion, heat from the superficial presence of blood from deeper vessels, pain from pressure on nerve ends.

Next follows repair, a broad term applied to all processes following the injury and exudation. It includes removal and encapsulation of foreign bodies of all sorts, the organization of fibrin and lime salts and the regeneration of cells and parts of cells. Its principles are embodied in the commonly understood processes of healing by first intention or by granulation. These two processes are essentially the same except for quantitative differences. The two cells mostly involved are the endothelial cells which proliferate to form new vessels and the fibroblasts which proliferate to form new connective tissue. In addition parenchymatous tissues must regenerate to bring highly specialized organs back to the fullness of their functions and on free surfaces epiblastic or mesoblastic epithelium must spread to cover denuded areas. (Demonstration).

The application of the foregoing principles to muscles, tendons, bones and joints can be made quickly, but it must be recalled first that the more highly specialized any tissue is the less likely it is to regenerate and that fibroblastic tissue, once stimulated, tends to proliferate beyond physiological need; that fibrin stimulates the formation of scar tissue and that dead bone can be removed by nature with the greatest difficulty.

Now for striated muscle. The injury may destroy it in part, but if any portion of such a muscle cell is spread it may give rise to a new muscle cell of its own kind. However, the same injury may simultaneously damage the connective tissue in the muscle. Calcium salts may be deposited in fat left by necrotic cells and even bone may be formed in the muscle as a result. Bacteria may infect it, extensive myositis may result and cause widespread destruction. Hemorrhage may constitute a foreign body. These complications may be counteracted in repair, but the connective tissue formation may be excessive, while, if the nerve or blood supply is shut off, the muscle must atrophy or perish from lack of innervation or nourishment. If a part of the muscle can be saved the surviving portion may hypertrophy and be trained to useful ends.

As to the tendons, ligaments and tendon sheaths, the pathology of their lesions is much the same as that of connective tissue elsewhere, except that the organization of fibrinous exudate in the tendon sheaths is quite likely to result in fixation if fibrous adhesions are not provided, or, if formed, are not broken up. Loose pieces of organized fibrin may constitute loose bodies in the tendon sheath and lead to no end of trouble.

A large amount of effusion in a sprain can be cared for if it does not become infected.

Simple fractures of bone are easily repaired. It is the infected lesions of bone which concern the surgeon most. Osteomyelitis is likely to become chronic. Dead bone becomes a foreign body hard to remove. The sequestrum is too big for the phagocytic leucocytes even when combined into foreign body giant cells. The sequestrum must be separated surgically. Inasmuch as bone is a form of connective tissue it tends to overproliferate and form callus. Such healing may produce deformities or interfere with function. Parts must be accurately coaptated and the greatest skill used to prevent infection in order to avoid the greater damage done by infection and callous formation, to say nothing of injury to the surrounding soft structures. Here, again, proper blood and nerve supply must be insured in order that normal metabolism and hence normal bone may be reestablished.

Lastly we come to joints. Lesions here are most serious of all because the function of the joint depends largely upon the perfect condition of the articular cartilages and their lining synovial membranes. Any alteration of these exquisitely perfected bearings causes extreme pain, impairment of function and, if the greatest skill is not used in treatment, in ankylosis by reason of adhesions and in complete loss of function.

In conclusion I hope I have made clear how the principles of inflammation, applied to these special tissues, explain all the widely differing pathological lesions; how the complications in these localities are evidenced largely by impairment of physiological function and how, by their

very nature, these impairments must be treated principally by mechanics, electricity, hydrotherapeutics and physical or surgical methods rather than by drugs.

APPENDICITIS.*

By A. W. CAIN, Somerset.

It is not my intention to write an article on appendicitis, but to call your attention to some points in the history of this disease which I hope will be of practical value in its management. In now almost 500 cases on which I have operated at all stages of the disease under all conditions and surroundings, I am fully convinced that the practitioner who expect to find a certain set of symptoms much less find them occurring in any regular order, will often if not generally find themselves mistaken, notwithstanding the greatest surgical writers as Murphy, to the contrary, some of the most malignant cases that I have ever seen have never shown any elevation of temperature, and while I consider the pulse of more value than any other one symptom, in the prognosis in this disease, still I have frequently seen a case develop and go from bad to worse until just a very short time before the fatal termination with a pulse of not over 80.

Recently I saw a boy of 8 years of age 48 hours after the beginning of the disease with a pulse of 76 and a normal temperature, suffering some pain, extreme nausea, marked rigidity and the expression of a desperately severe infection, an immediate operation was recommended and refused, the next day and for three successive days the child was reported better, the temperature never going higher than 100, nor pulse more than 84, then the child was reported as growing worse, and we received a telephone message from the family to make ready for an operation, that the family had decided that an operation was necessary and was starting with the patient to the hospital, on his arrival he was still conscious, pulse imperceptible, bathed in a cold perspiration, abdomen greatly distended, and lived only a short time. In this case neither the pulse nor temperature indicated any danger, while it was plain to see that the patient was in a dangerous condition. In the diagnosis I find that most general practitioners expect to find the point of tenderness and the mass, if there is one, too low, the pain is often located so high as to make the differential diagnosis by physical signs from disease of the gall bladder quite difficult, but the pain and point of greatest tenderness may be located at any point on the abdomen, it is not very uncommon to see this point located on the left of the median line. But, you may ask, with

such uncertain symptoms and signs so differently located, how are we to make a diagnosis? I will say in reply, that when you have an acute pain located in the abdomen with rigidity of the muscles, you will most always by careful examination find enough symptoms to make a diagnosis reasonably certain, in fact, such a large per cent. of cases presenting these symptoms coming on, without a history of some other trouble are appendicitis, and the few that not usually demand at least a section that you rarely make a mistake, this is borne out by the fact that in practically every case when a diagnosis of appendicitis is made by the attending physician, that on performing the operation the diagnosis has been confirmed. I now recall some cases when first seen by me two or three days after the attack, the diagnosis was not at all clear, yet on operation the diagnosis was not only cleared up but in at least two cases rupture was eminent. Drs. Hughes, Price and Warren have each sent in one similar case. Regarding the prognosis of this disease, the more cases I see, the more firmly am I convinced that no one can give any idea from the symptoms and signs what the termination of any case is going to be. A case with the most alarming symptoms by the application of ice or even following the much to be condemned purgatives with or without opiates, may in 24 hours present a condition apparently without danger and make a rapid recovery, while on the other hand a case at first apparently mild, may grow rapidly worse and only live a short time. The following case is an example.

Robert S., age 7, had had an attack three months ago, the parents were very intelligent people, and had decided that should he have another attack, that they would have an immediate operation. He complained of pain on September 22, last year, at 2 A. M. Dr. Sievers saw the case, and confirmed the diagnosis of appendicitis. The pain was not extremely severe, temperature 99, pulse 84. The father being away from home, he could not be brought to the hospital till the following morning, on his arrival, temperature was 100, pulse 90, some distention, which was not at all circumscribed, as the child was tired from the distance he had traveled, and the symptoms at that time did not appear alarming, we suggested that we allow the child to rest and watch the case, and stated that we would probably not operate till the following morning which would then only be a little more than 48 hours from the beginning of the attack, but in a short time the pulse grew more rapid, the tympanitis increased and the respiration grew more hurried and difficult. The operation was done about 1 o'clock, the appendix was found gangrenous and had practically sloughed off, the abdomen contain-

*Read before the Pulaski County Medical Society.

ed an enormous amount of thin pus; this was allowed to run out as well as possible, the stump of the appendix ligated with chromicised cat gut and two large tubes (and by large tubes I mean tubes at least as large as the index finger), were introduced so as to drain the cavity to the best possible advantage. The patient was placed in the Fowler position, and the Murphy drop used almost continuously for the first 12 hours, then at frequent intervals thereafter for several days. The patient, thanks to the wisdom of its parents and the attending physician, is now a fine specimen of boyhood. A delay of only a few hours would undoubtedly have meant his death.

Gentlemen, if we only looked on our sins of omission with the same feeling of horror, as we do our sins of commission, we would be extremely careful about advising or even consenting to the expectant plan of treating even one case of this treacherous disease, and yet is not the sin of omission far the worst? Because of this case you have not used your best judgment, you have not used the knowledge you have before you. In all our work in these cases, I have only seen one case operated before the formation of pus, die; why this case died I do not know, but he seemed doomed from the beginning. He was an extremely nervous patient, he became delirious immediately after the operation and with a normal temperature, and a full, strong pulse for the first 48 hours, his delirium continued and he appeared to die from exhaustion, it taking at least two nurses to control him from the time of operation until his death on the third day. On the other hand I see a number of cases die each year that refuse an operation, and occasionally one die who is operated on later in the disease, after the appendix has ruptured and pus has formed. Allow me to say here, that if you are going to take chances and delay the operation, hoping that recovery will take place or that the trouble will be localized and that only an abscess will be to open, don't take such chances with children, as with them the omentum in short, and nature does not appear to wall the pus off very well. If you are not allowed to operate, don't give purgatives, not even enemas, except possibly a small one at the very beginning of the disease to empty the lower bowel, don't give opiates in any form, don't give any food at all, only the least possible water, if any at all. The proper thing, in my opinion the only safe thing to do, is to operate just as soon as you can get your patient to where you can have proper help and proper nursing, for I firmly believe that at least as much depends on the nursing as upon the operation. If there is pus, the proper emptying the tubes, the Fowler position, the Murphy drop, the management of gas pains, and in case of distention, not allow-

ing paresis to occur, are all essentials in the proper management of these cases.

I am afraid that I have tired your patience by telling you what each of you already know, however, if the paper will only be the means of each of you stating your convictions on this important subject, I shall feel that our meeting to-day has been of some real practical value.

THE PROPER CARE AND TREATMENT OF BABIES' EYES.*

By J. H. THORP, Owensboro.

"Beautiful eyes are those that show,
Like crystal panes where heart-fires glow,
Beautiful thoughts that burn below."

With normal healthy parents, we have a normal healthy baby.

The problem of caring for its eyes is very small, but for those who are otherwise, our State Board of Health found it necessary to pass certain laws and rules to govern the attending physician in each and every case. When the baby is born these instructions are followed by him and he gives instructions as to its care and treatment.

Plenty of clean water, sunshine, not directly in its eyes, with fresh air and proper nourishment is the sum total of the care of a healthy baby's eyes. It is the sick eyes that we are called upon to prescribe for instead of the cause that made this condition possible. Therefore we think the proper time to begin the treatment is two or three generations before the baby. This brings to our mind the old adage "An ounce of prevention is worth a pound of cure." Happiness to a tiny child consists in sleep, warmth, nourishment and light.

"In the spring the good gardner makes a careful examination of the plants in his garden, with tender care he cuts the tendrils that are pushing outward, there picks a caterpillar from the leaf, protects elsewhere a tender bud, inserts a prop in another spot and everywhere digs up the weeds and parasites that threaten to choke the life of the garden.

In the springtime of life those who have to teach children should be good gardeners, who watch with the closest attention the unfolding of the flowers of the soul. With tender care they must disengage each guilty, and keep it from being crowded out from existence. They must be watchful tutors of the fragile plant of humanity. They must see to it that it enters life straight and supported by the props of good principles. They must strip it of bad habits, the practical defects that would mature into vices, and would choke up all the sensitiveness and intelligence, with-

*Read before the Daviess County Medical Society.

out which there can be no true wisdom—these windows by which there will most readily stream in upon the growing plant the light of knowledge gained by love, tender care, and the beautiful life of the teacher and parents."

Man is not only responsible for his health, but also the health of his offspring. Disease, moral and physical, is entailed by disobedience to nature's laws. Evils, physical and moral, are inflicted on the descendants by parents. Our own generation is suffering because of the bad living and conduct of preceding generations. Purity of thought and body must be taught in the home. Parents should wake up to the importance of this subject.

In the matter of the regulation of matrimony alone society is woefully at fault. Man is not as wise as the bull in the fable: A magnificent Durham bull was quietly munching the juicy clover in a field one fine morning, when he was observed by a man who was passing. The man went up to the fence near which the animal was grazing, gazed at him admiringly, commented audibly upon his fine points, and exclaimed, 'What a magnificent animal! Really, nothing could be nearer perfection in his species.' The animal turned his head, gazed at the man pityingly, and, much to the man's astonishment, replied: "Yes, you poor little degenerate shrimp, I am a fine animal, but if half as much pains had been taken in selecting your father and mother as were taken in choosing mine, you'd have been a fine animal yourself, instead of a measly two-legged nothing."

Man has little confidence in human morality and conscience that needs formulate laws to protect himself from himself.

Misery, poverty, idleness, drunkenness, and disease, these are the grandly offensive pillars that support and make necessary our reformatory system yet receive no attention from it. Society permits the existence of social cesspools, and tax honest and industrious people to stamp out its results, and there are those who believe that such conditions are to be controlled by dealing with their effects. This is as logical as treating the sick man for his fever and forgetting to wash out some infecting sore which, though covered from site ever breeds a new and varied supply of putrescence to poison his blood.

It is not within the limits of the paper to go into detail into all of the different diseases that affect the child's eyes, but in a general way it is best to consult your family physician, if he is not in a position to handle the case as it should be, he will inform you the next best thing to do.

In all sincerity let me impress upon you the importance of not using everything that is rec-

ommended by anxious friends, for it is of too vital importance to take chances.

There are a few diseases that we will mention as they are of more importance in way of hygiene or preventive medicine.

Those acute infectious diseases of the eye in the new baby are of especial interest for about 30 per cent of the blindness we have is due to gonorrheal conjunctivitis. On this subject much could be written. One of the best ways of handling this condition is for the public to see the importance of it in its true light. As time goes on the false modesty is being cast aside and public speakers are educating the public more and more along the right lines. The mothers are teaching their daughters more about the lie of the wild oats, and beware of the young man that has been sewing his wild oats. The fathers are chumming with their sons and this is one of the best signs we have of something better in the future.

Mrs. Ella Wheeler Wilcox has written a poem which I think will help illustrate this very beautifully:

THE PRICE HE PAID.

I said I would have my fling,
And do what a young man may;
And I didn't believe a thing
That the parsons have to say.
I didn't believe in God
That gives us blood like fire,
Then flings us into hell because
We answer the call of desire.

And I said: "Religion is rot;
And the laws of the world are nil:
For the bad man is he who is caught
And cannot pay his bill,
And there is no place called hell;
And heaven is only a truth,
When a man has his way with a maid,
In the fresh keen hour of youth.

And money can buy us grace,
If it rings on the plate of the church
And money can neatly erase,
Each sign of a sinful smirch.
For I saw men every where,
Hot footing the road of vice;
And women and preachers smiled on them
As long as they paid the price.

So I had my joy of life;
I went the pace of the town;
And then I took me a wife,
And started to settle down.
I had gold enough and to spare
For all the simple joys
That belong with a house and home
And a brood of girls and boys.

I married a girl with health
And virtue and spotless fame,
I gave in exchange my wealth
And a proud old family name.
And I gave her the love of a heart
Grown sated and sick of sin:
My deal with the devil was all cleaned up,
And the last bill handed in.

She was going to bring me a child,
And when in labor she cried,
With love and fear I was wild—
But how I wish she had died.
For the son she bore me was blind
And crippled and weak and sore?
And his mother was left a wreck.
It was so she settled my score.

I said that I must have my fling,
And they knew the path I would go;
Yet not one told me a thing
Of what I needed to know.
Folks talk too much of a soul
From heavenly joys debarred—
And not enough of the babes unborn.
By the sins of their fathers scarred.

There is a condition that we have in school children known as folliculosis, which Stephenson found in 75 per cent of all the school children that he examined. It is seldom found after the 20th year. Of late it has been mistaken for trachoma. It will not destroy vision, it will not produce deformity of the lids, nor produce pannus, it will get well without treatment. Trachoma will do all of those things and more. Trachoma is found in all ages but very seldom in children. It is a disease of adults. Trachoma is not an air-borne disease. The infecting material has to get into the eye to be infected by direct contact with the infecting material.

A number of our best ophthalmologists believe and advocate that it is as important for a child on entering school to have a certificate of his refraction as it is of his vaccination. This would save many children from truancy, as well as from blindness.

A child is educated through its eyes for the first few years of its existence, is a fact beyond any question, which have been aptly termed the "main thoroughfares to the brain." Is it not reasonable to assume that if these eyes are distorted in their efforts to perform their function, a malformed image is carried to the brain and a distorted impression is the result.

Eyes have been called the "windows of the soul," and why? It is probable because the soul looks out through them and observes the beauties of nature, the perfect blending of her colors, the changing views of hill and dale as the seasons come and go, and the myriads of lights in the windows of heaven,—and do not

these views enable us to get a glimpse, as it were, through the soul's eye of the Creator of these, to us most beautiful pictures.

But how do the eyes reveal to our minds or our souls the beauties of the landscape and the majesty of the heavens? It is said that the refracting media of a normal eye, acting like a strong convex lens converges the light rays that enter it, so that they are brought to a focus upon the retina, and there is an image or picture of the object from which the light waves came produced there, and that this picture is transmitted by the nerve fibres which compose the retina, to the brain, and that the brain, if it be normal, transmits it to the mind or soul, and we see.

Of all the five senses that of the sight is the most highly developed and differentiated, and when the eyes, through a defective refraction or imperfect adjustment, fail to work in harmony, there is brought about a condition which is important and too commonly neglected fact in the cause and perpetuation of disease. The purpose of the eye is to receive the rays of light which are focused upon the retina where they are changed to nerve stimuli, and these stimuli are conducted to the brain.

Improper light with errors of refraction will give the following symptoms: Sandy, scratchy feeling in the conjunctiva; dry, hot, burning, itching sensation; increased frequency of winking, lacrymation; difficulty in keeping the eyes open; tired, aching feeling in the eyes and in the orbits, and extending to other parts of the head; blurred, indistinct vision, improved by rubbing the eyes and resting a short time, but quickly returning. These are symptoms of eye-strain in general but of no particular kind.

One way in which the growing interest in school hygiene is shown is the increasing demand that the eyes of the children shall be conserved by proper glasses, whenever they appear to be causing trouble. This truly, as it should be, but the decision to do the proper thing does not always include provision of these ways and means. It is one thing to say that a child needs glasses; it is another to see that he gets them. Unfortunately some children fall into the hands of some people who, for the sake of selling a pair of glasses, will undertake to solve the intricate problem involved with a deftness and celerity which would be remarkable if successful.

We often meet with a condition in early life that is due to improper breathing due to the blocking of the post-nares with a fungus tissue known as adenoids, very large tonsils are most always found in these cases. The sooner these obstructions are removed the better for the child, don't adhere to the old time idea that the child will outgrow this condition for by so doing you have robbed the child of

its right to a healthy normal development. The damage will have been done, that can never be overcome fully by nature. Adenoids, diseased tonsils and bad teeth affect the eyes very much. In maintaining a normal eye these things can not be neglected if you would get the desired results.

In all the diseases, defects or anomalies of the body, no better or more sharply-defined examples of heredity have been found than in the human eye. The question of heredity can hardly be studied too closely. Through a continuous campaign of education and the development of a public sentiment that will both demand the enactment and secure the enforcement of laws prohibiting the marriage of the hereditary blind, untold suffering and much economic loss will be prevented. Attempt should be made on every suitable occasion to discourage the marriage of blood relations and of a person with an inherited defect that will cause physical disability or mental distress in the offspring. It is to be hoped that eventually such marriages will, in every country, be under the ban of the law.

Whatever influence may be brought to bear by hygiene or education, the ultimate decision rests with the cell as to man's physical destiny.

The pictures that have been so vividly depicted by Dr. G. Frank Lydston on the effect of the sewing of wild oats, I will quote at length, to better illustrate this point.

"That the average young man sews wild oats in the present condition of society is indisputable. That the more substantial and manly men are often the ones who have paid particular attention to their sewing is true. The belief is quite general that every young man of stamina 'must sew his wild oats.' Some go so far as to say that he can not amount to anything unless he does sew more or less of them.

"Many young men who might have been ornaments to society have been ruined for life by wild oats sewing. That any man is better for his wild oats sewing is false. Boys will be boys, they say. Oh, yes, dogs will be dogs; but does that lessen the virulency of hydrophobia?

Almost every boy at some time in his life is taught by his elders the lie of the wild oats. His father and grandfather learned it before him, and followed where it led. The man who escapes its dangers does so by great good luck or virtue of a strong organization, moral, mental, and physical, is a fallacy. Physical, mental or moral scars remain and while the world may be satisfied with him, he is never satisfied with himself. Shall youth be exposed to debauchery to strengthen it? No, a thousand times no. Protect your youth from wild oats influences until its judgment is mature,

and there will not be so many brands to be plucked from the burning. In as much women have written themselves into them, pictures only too familiar.

Picture 1.—A health resort—the sink hole into which a large part of the crime, immorality, and disease of America is dumped, has a hundred thousand visitors annually. Of these, a large proportion go there to harvest their wild oat crop. Visit one of these "rale-holes," and tell me how you like the harvest.

Picture 2.—A hospital.—Here is a group of locomotor ataxics; there is a group of deformed children, yonder, a girl in her teens is nursing a child who is not wise, for it knoweth not, ne'er will know its father. More wild oats.

Picture 3.—An asylum. Here is a case of general paresis; there a melancholic; in the next room a maniac can be heard shrieking. Wild oats a plenty.

Picture 4.—A foundling asylum full of children, cursed before they are born by society's cruel term, "bastard." Poor little wild oats.

Picture 5.—A doctor's office, full of anxious men, and still more anxious women, who do not gossip much about their ailments, even among their intimates, save where the women are told by the doctor a euphonous fairy-tale for home use. Wild oats growing in the dark.

Picture 6.—A beautiful girl was found dead in the river one fine morning. What was she doing there? Washing the wild oats out of her life.

Picture 7.—A pistol shot out in a gambling hell, a man falls dead. The gun was loaded with wild oats.

Picture 8.—A series of deserted babies are found in the snow. Who planted them there. Wild oats grow in the snow?

Picture 9.—A wife, surrounded by hungry children, he has whipped her, is in jail, or has deserted her. Wild oats are not a poultice for a broken heart; they are poor food for babies; they do not buy coal, nor cover nakedness.

We doctors know the wild oat crop under numerous terms, crime, inebriety, syphilis, paresis, locomotor ataxia and gonorrhea are chief among them. What the consultation room does not tell us the operating table does. Wherever immorality, vice, disease, crime, drunkenness and insanity most thrive, there, if we dig down to the very root of these evils, we find wild oats the thickest. Are they not garnered with the sickle of regret and threshed with the frail of disease and pain."

HEALTH CONDITIONS IN PIKE COUNTY.*

By W. J. WALTERS, Pikeville.

Gentlemen, in the first place you must understand I am in one of the largest, if not the largest county in the State, and a border county at that. While we are wealthy in natural resources, and brains and goodheartedness, you must remember, we are not very well educated. Yet I find that all the ignorance of medicine is not confined to the most ignorant class. In my work I can not see that I have accomplished very much this year, still I feel much gratified that we have secured for Pikeville and Eastern Kentucky, the Trachoma Hospital, and am very much encouraged at the present outlook, and am hoping for better things.

I think we are getting the smallpox situation under much better control, not having heard of a case for many months. People are not so much opposed to vaccination as they have heretofore been, and it is much more easy to secure co-operation—in some places.

I had more than 500 persons vaccinated this year, although one of my co-workers had to almost knock one fellow down and gave him the second vaccination.

While I did not have to use force, my powers of persuasion and patience were taxed to the limit.

It is not so much trouble to take care of the smallpox in the interior part of the county, the real trouble is along the border, where several large coal and lumber companies are running large operations and employing many men. In most instances the managers and officers of these companies have rendered us all the assistance possible.

We have not had so much diphtheria this year. More people are learning the benefit of antitoxin, and there are not so many like the old woman who used "Granny's" remedies until the child was so nearly dead that antitoxin could not save it and when I wanted to give another child of the same family a preventive dose, she said "no, I don't believe in giving medicine to children that is not sick, and if people were as afraid of the devil, as they are of that disease, we would have better times." (This old lady moved into Pike county from Virginia and after two years' sojourn in Kentucky, returned to Virginia).

Thanks to Dr. McMullin, and others, we now have a trachoma hospital at Pikeville, of which we are very proud. It is filling a long felt want.

People in general are having more confidence in doctors and doctors' medicine. Truer hearted and better people are found nowhere

than among the mountains of Eastern Kentucky, and while the illiteracy of our people is to be deplored, yet we are not quite so black as we are sometimes painted. We need more education, and pure religion, and less politics and misrepresentations.

With the help of the trachoma hospital the county agent and wife, the traveling Sunday School worker and the civic league and business club, I hope to do much better work next year.

If some of our so-called society people would give more time to the education of the poor and illiterate instead of some fad, their lives would be better spent, and the future citizen would be greatly benefitted by their effort.

Whenever Kentucky decides to spend as much time, energy and money on her children, the future citizen of the Commonwealth, as she spends on horses, cattle, and other livestock, the health officer will have very little to do in seeing that Kentucky is kept in the front ranks, as to education and health, and alongside with our most advanced states, that have so far outstripped us.

HEALTH CONDITIONS IN ROCKCASTLE COUNTY.*

By A. G. LOVELL, Mt. Vernon.

The farmer who plants a field of corn or sows a field of wheat without first putting his ground in order, deserves the failure that awaits him. It has been said that a statutory law that is not supported by public sentiment is a dead letter. It is just as necessary to create sentiment first, by or through education, as it is for the farmer to plow, fertilize and pulverize his land before planting his crop.

To awaken in the public mind a sense of personal responsibility in regard to matters of health, requires arduous disinterested labor. Moreover it requires a high type of citizenship—real patriotism—to make such a fight. The average mentality, when you consider the popular mind, is much like the primary grades in our schools. The individual does not reason. Through lack of training, or because of environment, he is content to follow along the old beaten paths that his ancestors trod. Like a child he must be shown. Demonstrate the better way and repeat the demonstration again and again until he falls in line and in a sub-conscious sort of way begins to do them. The children will come to the rescue in many instances because they are more susceptible to new influences. They make good agitators and splendid home mis-

*Read before the Fifth Annual Conference for City and County Health Officers, Louisville, 1916.

*Read before the Fifth Annual Conference for City and County Health Officers, Louisville, December 15, 1916.

sionaries. When once enlisted they can do much more with the parents than you can.

The medical profession in Rockcastle County claims no intellectual giant, but they are a good set of fellows who love their profession. In point of preparedness and efficiency they make a good average. In enthusiasm and devotion to duty they excel; ever ready to go where duty calls and to remain as long as the exigency of the case requires. These men stood as a unit for the bill giving each county a whole-time Health Officer, because they thought that the benefits accruing through the operation of that law in the conservation of health, would far exceed the expense of supporting said officer. The profession here has done a great deal of missionary work along the lines of public health. As evidence of that work, you will find bath tubs and septic tanks in many homes and a few schools. The public has come to understand that the fly must be "swatted" and his breeding places broken up; the soil must not be contaminated nor the water supply polluted; that houses must be well ventilated and screened; that vaccination against typhoid fever as well as against smallpox is necessary. The slogan is "Clean lives, pleasant homes happy people."

The teachers in the public and private schools have done their duty in this campaign. The Women's Clubs merit honorable mention as well. Not the least of these educational influences is the splendid campaign in the interest of Good Roads and the real work of road building. Was that awakening but a local matter it might not mean much; it is country wide reaching from the Atlantic to the Pacific, from the Great Lakes to the Gulf. Fortunately for us we are in the thick of the fight situated as we are at the junction of the Boone Way and Eastern Dixie

There is another factor whose benign influence has permeated every fibre of the social and economic fabric, and fitly claims an honorable seat at the feast of good things. Lest I should overlook some worthy names I shall speak of these true patriots only as a corporate body. I refer to the Kentucky State Board of Health. Without doubt when it is ready to hand in its final report it will be able to say like St. Paul: I have fought a good fight, I have kept the faith, I have finished my course, there is therefore, laid up for me, a crown of life.

SOME OF THE THINGS A COUNTY HEALTH OFFICER SHOULD DO.*

By C. E. KIDD, Paducah.

Section 2055, Kentucky Statutes: It shall be the duty of the County Health Officer to require heads of families, and other persons, to execute such sanitary regulations as the local board may consider expedient to prevent the out-break and spread of Cholera, Smallpox, Yellow Fever, Scarlet Fever, Diphtheria and other epidemics and communicable diseases.

And to this end bring the infected population under prompt and proper treatment, during premonitory or other stages of the disease, and they are compelled to go and inspect any premises which they may believe are in an unclean or infectious condition.

A health officer should have all the above and more; he should be a fearless plain-spoken man with a health board behind him to back him in what he is doing and to encourage him in his work as health officer.

During the past four years of my term as health officer, I have made over 500 trips to the county, have flagged every house reported to me with contagious diseases, and fumigated afterwards, and have visited every dairy in the county, and have found a number of them in a very unsanitary condition: cows standing in mud eight and ten inches deep—one cow so poor she had to be swung up to be milked, others lousy. Milk strained in open cans and delivered at the customers in an open pail, set on the gate post or porch exposed to the dust from the street, and the stray dogs and cats.

Now Paducah has one of the best milk ordinances in the State and it is being enforced. Our dairies are in a very sanitary condition; cows have been tuberculin tested and milk cooled and delivered to customers at 60 degrees and in stoppered bottles.

I have visited a number of the schools in the last year and find some of them in very bad condition, but have succeeded in organizing a health committee in some of the districts, this committee to have immediate charge of the health matter of that school and district, and to report to the county health officer from time to time, any nuisance or contagion that might exist.

With such an organization in each school and district, let us consider some of the work it would undertake, with reference to the clean happy children, as they assemble at school, day after day, suppose some are not so, then let the health committee send a notice or request to the health officer, who has a legal standing, and have matters improved.

*Read before the Southwestern Medical Society.

The same order of procedure should be adopted when there exists in a family, contagious or infectious diseases.

Thus the ravages of scarlet fever, typhoid fever, diphtheria, measles, whooping cough, tuberculosis, and many others could and would be reduced.

I think we should enforce rule No. 20 1-2 of the Board of Health, compelling every school district in the county to build sanitary privies, thereby protecting the children from the rain and cold, and above all, the fly.

Every school I have been in this fall, but one, has promised to put in sanitary privies, as the school board has agreed to buy the material, if the district would build it, and in this way, I am sure, we will accomplish a great deal along this line.

The best sanitation provides conditions which are conducive to a moral state of the body. The specific duty of securing these conditions should be placed upon some one.

I know no better way than the one suggested, at present, and until the public is more enlightened on the subject of school sanitation and hygiene, our services are to be rendered without money and without price.

The peculiarity of sanitation is that those engaged in it, work without compensation, their work is educational and compliance with their plans is voluntary, assuredly now is the time in school sanitation. Therefore very little law is needed, and much of brain and earnestness.

We call special attention to the contagious diseases, typhoid fever and tuberculosis already mentioned. Time was when we ignorantly passed them by lightly. Present knowledge of these diseases demand that we give them more earnest heed.

Neglect is criminal, then too, the more general subjects of drainage, water supply, should be looked after.

I have sampled six wells in the school district and found all polluted with colon bacilli and some with sewer bacteria added.

The time has fully come for work and I know of no better place or way than to use the school and school district as the writ of organization.

So far as this generation goes an appeal to the common sense of the business world gives the greatest promise of success. The facts and the laws only need to be verified and iterated and reiterated for the significance to be recognized.

Under the complex conditions of both rural and urban life, when the individual has done all in his power for his own protection, there remains a large domain when he must be protected by some general authority or perish.

The present generation has had little training as to the value of health in either the home

or the school, and it is so difficult to change the thoughts and habits of a lifetime, that at best, we can only hope to reach and inform the more intelligent class, and improve general conditions by organizing or causing to be organized a health committee in each school district with active members composed of patrons of the school, who will cooperate with the health officer and medical profession, in each district, in systematic meetings for the instruction of the people in the matter of sanitation and hygiene. There are doctors in most sections so interested in this work already that I believe that the plan could be carried out with little or no expense.

The sooner we learn to pay for their services, the better for the public, until that time we should emphasize personal duty to the public and take all we can get for nothing.

Even with the most complete training and devotion to duty, there is little future for our work in any city or county unless its health officer is so supported that he can give his entire time to his duties, and the office is taken out of politics and the tenure made to depend entirely upon a steady improvement in sanitary conditions, as shown by the gradual decrease in the sick and death rate. A real health officer of this kind, who can secure and hold the cooperation of the people in the life-saving work to which he has consecrated himself is a necessity of modern life in county and city alike. Such a health officer should not practice medicine. It would be just as reasonable to ask judges to support themselves and families by the practice of law while serving on the benches as to expect health officers to do their far more important and exacting work effectively and practice medicine. The vocation of health officers and medical practitioners are not only incompatible, but there would be no time for practice, if his official work were properly done, and in some counties there would be need for assistance to carry it on. Let us no longer deceive ourselves or permit the public to be deceived, unless we can have a trained health officer in each jurisdiction, so selected and supported that he can qualify himself for this specialty, and make the practical prevention of sickness his life vocation, sustained health work in that jurisdiction is impossible, and if we do not have reasonable hope of bringing it about, most of what the medical profession stands for is but an iridescent dream.

A great deal more could be accomplished along these lines were it possible to have the wholtime health officer, with reasonable compensation for his services. As the matter now stands in Kentucky, a physician cannot afford to give his whole time to health work, he must of necessity engage in general practice in order to maintain himself and family.

If the law would provide sufficient compensation for a physician to give his whole time as a health officer, a great deal more could and would be accomplished throughout the State along the lines of preventive medicines.

Let us hope that our law-makers may see the necessity of our State providing for a whole time health officer.

CUTANEOUS HORN; REPORT OF CASE.*

By A. H. BARKLEY, Lexington.

The following case is of interest mostly from the fact that horny growths seen in this part of the country are usually of the excrescent type and are seldom permitted to attain the size of the case reported.

Cornu cutaneum is a comparatively rare disease in which the horny growths are found upon the surface of the body, mostly on the



scalp, face and head. They vary in size from a mere horny bump to 10 or 12 inches in length, whose base may measure several inches in circumference. They are usually curved but may be straight and have a green, gray or brown color and are always rough and never smooth like the horn of the lower animals. Little is known of their etiology, however one thing is certain, that in the vast majority of cases the base may become malignant. The only treatment that offers much is wide excision of the base; some remove the horn, curette and cauterize the base.

This case was referred to me by Dr. Sleet, of Midway, Ky., and gave a history of having

had it for a number of years, during that time it had fallen off twice, each time to return. It measured 3 1-2 inches in length and 3-4 of an inch thick at the base. The base was widely excised and skin drawn together, which healed nicely. It has now been several months since its removal and there has been no disposition to return.

THE PRESENT TREATMENT OF PUERPERAL INFECTION.*

By J. F. YOUNG, Monticello.

In the KENTUCKY MEDICAL JOURNAL of January 1st, 1917, on page 25, we find a paper on the above subject, read at Hopkinsville, October 24-27, 1916.

After the reading of the paper it was discussed by some others before the Kentucky State Medical Association.

Gentlemen, it is not my purpose to go into any controversy with any of these doctors, but I write these brief statements that I may bring before this society what they call the "present treatment of puerperal infection."

The essayist is conservative in what he has to say on this subject. He does not fully accept the most radical doctrine nor wholly reject it.

It is some of the statements in the discussion of the paper that I wish more particularly to call to your attention.

The essayist makes this statement: "The prompt administration of a calomel and saline purge followed by quinine and ergot every three or four hours." This he gives as treatment and a means of diagnosis. We do not object to this, but make the quotation here that we may show the contrast in the discussion of the paper.

In the discussion, page 29, we find this statement: "In the septic cases there should be no vaginal or intrauterine manipulation at all. Even purgation by the mouth should not be used, but the bowels emptied when necessary by low enemata." This to my way of thinking is a very radical and dangerous advice. At least until something is offered that has more power over the unfortunate cases than the present recognized treatment.

The source of all the trouble in puerperal infection is in the wounded uterus. I will agree that it is a case of surgery, and that it would be equally proper to leave untouched an infected wound in any other part of the body, or at most, just pack the wound with iodoform gauze. Here it is:

"Then pack the uterus with iodoform gauze loosely and repack it until the piece of placenta comes away." This I do not believe any surgeon of an established reputa-

*Read before the Fayette County Medical Society.

*Read before the Wayne County Medical Society.

tion would do with our present knowledge of the course, of neglected infected wounds. Apply local treatment to the wounded uterus for the same purpose that you apply local treatment to a wound on any other part of the body. Do this always with the strictest surgical cleanliness. Then follow this promptly with a calomel and saline purge to clear out the bowels and arouse all the glands and organs to a more vigorous excretion that the poison now in the blood may be more rapidly eliminated.

The essayist quoting in substance from De Lee's text book says: "That being convinced that it does more harm than good he has practically dispensed with local treatment, that only if the woman is having uterine hemorrhage does he interfere and then to pack the uterus with two per cent iodoform gauze." A most remarkable teaching, recognizing hemorrhage as the only indication to interfere.

Hemorrhage is not the only indication for interference in these cases, it is one indication. Chills and a raging fever in a few days after the birth of a child at full term points to infection. In a practice of more than twenty years a number of cases of puerperal infection have come under my observation where there was no hemorrhage. Chills, fever and tenderness pointing to the infection.

The first thing to do in every case of puerperal infection, hemorrhage or no hemorrhage, is to look for some retained pieces of membrane and placenta or blood clots at the uterine wound. In every case that has come under my observation, I have found putrid material in the uterus, and in most all of these cases when this putrid material (placenta, membranes or blood clots) were thoroughly washed out and the wound cleansed as thoroughly as we would cleanse a wound in any other part of the body, the chills stop, and the fever disappears.

Unfortunately some of the cases drag on for weeks, especially those that have been neglected for several days and in the women who have not a great resistive force. Others are swept off into eternity before your eyes almost before you have time to institute any treatment, even supportive measures.

Again I quote: "In the past we have done too much, and the first thing we have to learn is to undo nearly every thing that we did before." Unsafe advice until something definite in treatment is found. A specific.

I quote another illuminating statement: "It is safer for the mother to leave the placenta untouched rather than remove it and cause trouble." Should read, take the placenta out of the uterus and cause no trouble.

One more quotation: "If at the time of delivery you know that you have left a large piece of placenta and membrane in the uterus,

leave it alone unless it causes hemorrhage." *No, never!*

The newspapers have been talking much about the government's policy, for the last two years of "watchful waiting"; I never fully understood that till now. I have it.

There is no better way to get the doctor or midwife into trouble than to follow the advice of the two last quotations, and to increase the number of deaths from puerperal infection from eight thousand in 1914, to twenty thousand or more in 1917. At the full term of pregnancy the germ (now developed) has been in the uterus ten lunar months. At the expiration of this time the child is fully developed and the woman has been prepared by the laws of nature to deliver the child. The uterus at this time becomes sick and with a power far above and beyond the woman's control, will try to give up what it has had in its keeping. It will never be satisfied until every piece of membrane, placenta or blood clot has been discharged.

What we do is to help nature to clear out the uterus of all the waste products. Why camp at the vagina and pack with iodoform gauze, when you can pass your fingers up into the uterus and clear out all pieces of placenta membranes or blood clots in less than three minutes and "avoid trouble."

There is no danger to the woman in doing this if your hands are surgically clean and you have no right to attend a case of labor unless you have clean hands as stated above. Not gloves. Gloves protect the doctor not the woman as experience has demonstrated.

There are sixty-four midwives now registered in the Bureau of Vital Statistics and are now residing and practicing obstetrics in Wayne County, Kentucky. Why more women are not infected by these midwives is one of the unsolved problems of modern medicine. The most of these are very poor and illiterate.

Practically all the cases I have seen have come into my hands from this illiterate class of midwives working with unwashed hands.

Urinary Sulphur Partition in Various Diseases.

—The lowest average total sulphur excretion (0.88 gm. per day) was found by the authors in a series of thirteen cases of carcinoma. The same series showed also the lowest average neutral sulphur excretion (0.20 gm. per day). The proportion of the neutral sulphur to the total sulphur in this group is considerably higher than the normal proportion of the total sulphur excreted as neutral sulphur. However, the relation of the neutral sulphur to the various diseases (not including diabetes or carcinoma). In this group we find that both the relative and absolute amounts of total sulphur and neutral sulphur to be higher than in cancer and diabetes.

LIFE'S IDEALS.*

By BOB OVERBY, La Center.

"Beyond the slumbering of our sleeping souls
The twilight frets and fumes
When merrily man and woman too
Fetch theirs in common to woo."

In this busy hour of rushing humanity, in the pursuit of self preservation, clothed in commercialism, draped in social ambition, how shamefully we have abused the real foundation, that is, the natural.

How often have our hearts ached, how our consciences have contemplated suicide, how thick and fast the clouds, how great has been the effort to face our own acts or a lack of them.

How long, with our knowledge of the good we might do, will we allow our greatest inheritance to decay, become palsied, and atrophy. Privilege should be the new insignia and duty should take vacation, our slogan should be privilege.

We are just folks differing but little. What difference do we find in the study of the cells, tissues, nerves and bones so harmoniously linked together? What kindred our frailties, weakness, and virtues? Let us presume the thing as it is, very much akin indeed.

What difference between savagry and a model of to-day? Not in tissue cells, not in muscular development nor instinct; only the influence of polishing, influence that insured him by the onrush of his more enlightened foe; swinging the lamp that soon illumed his trail into things higher and things to be.

Privilege was the factor carrying the light to the less informed brother, and to-day privilege was never so great for unselfish endeavor.

So largely speaking you young people will never see the crudity of your kind as the memory of us may recall.

Privilege and its opportunities have been greatly magnified and enlarged, for thoughtful endeavor in the consideration of what our relationship can do, for the ever hoped for, and longed for, as a blessing whose profit we can not estimate.

The polishing stones have been grinding exceedingly fast, and let's hope it is at its work in this school and community, spreading the cement of fraternal love and well being that our having passed this way once, our community ideals will lend the unmistakable evidence to those who will follow us, that our example will not be changed but, will be the model eternal but more generally, and ideally executed.

Have you ever enjoyed a beautiful sunset with its indescribable tints, or a quiet gaze

into the ethereal blue, and revelled in quiet and alone where our highest thought and actions have their origin? And when this picture is finished how natural it is, or should be, that we share it with some other.

To me that is the highest privilege and sweetest melody tuned to unselfishness and thoughtfulness.

Yes, you have, we all have; and by and through these are created the nucleus from which develops the image of mankind in his sublimest reality.

Higher citizenship should be the greatest reward hoped for and those nearest and about us should be the judge.

Many of us may never be so fortunate as to view the beauties of the foreign shores, with all their beautiful scenery and picturesqueness, perhaps they are not superior to our own anyway, so let's interest ourselves, and others, in the beautifying of self and nativity.

And in doing so we will have found the time no better spent, than in doing for each other as privilege has generously contributed.

This brings us to the whole crux of the possibilities of this paper, our school.

The day of taking things for granted is past, and the memory of it will soon be forgotten. Within my memory and experience medical schools were far from the institutions of efficiency that they are to-day, and the same thing is true of our literary institutions as well.

Voltaire once said of the medical profession: "A physician is a man who pours drugs of which he knows little, into a body, of which he knows less."

There was a time, perhaps, in the memory of the distinguished gentleman's time, that fully deserved his compliment.

Efficiency is the crying need of the hour in all the departments of this busy age, and it is being attained with such rapidity that it is almost staggering, at least to some, who can't keep awake long enough to grasp the truth of the situation.

There is a demand for a high standard of efficiency; who would have it otherwise; surely not one of these pupils would want something without an earnest effort.

In this school devolves upon you individually the success of your future careers perhaps, and the interest you manifest may be the means of bringing to light some one else whose opportunities may not be overly flattering, but it may put the whip of ambition into him, from an angle of possibilities in a hopeful angle never occurred to him before.

Again, your success is still more unselfish that your efficiency reflects your tutoring and these teachers advance in their work by

*Read before the La Center School Improvement League.

the world judging their fitness by the literary clothes you wear.

Boys, look about you and picture the need of better farmers, accountants, doctors, teachers, professionals in all the departments of this commercial age; look to needs of more worthy fatherhood; girls look well to the choice of husbandry; remember this if nothing more, inferiority breeds inferiority, a tubercular husband means in most instances an infected wife, mother, children, a home where heart aches will be many, where comforts will be wanting, necessities the rule, regrets abundant, humiliation staggering.

Girls, you have every right to know in a large measure, with whom you are to identify yourselves in your nuptial embarking, and you can far exceed your own expectations with much valuable information if the mission is not too hurried, and my work bears me out to declare to you that marriage with its tremendous responsibilities should invite the most serious deliberation, and if you will take an inventory of your schoolmates and friends who embark too hurriedly, their picture will be your's, perhaps, if your judgment and haste is no better applied.

In this school talent is developed, and developing to fill the great demands of society, and in proportion to numbers and fitness let's believe the percentage is no better anywhere.

How it delights my very soul to enjoy the splendid complimentary contributions so frequently paid this school, its citizenship and this community. Being on the outside it comes from the quiet and dependable sources whose sincerity of purpose is unquestioned.

Compliments, like flowers, seek their place in publicity where we can pluck our share, and enjoy the pleasure. So I want to say that so often your teachers, present and past, and others in position to know, declare: for bright minds, talents, and natural ability to do things well, La Center pupils are second to none.

We must declare a reputation you enjoy for progress, thrift, and qualities, is one you must jealously guard; and it devolves upon you to carry out the expectations of your friends, and interested ones. Will you disappoint them? Let's believe you already see the light in the distance, which is the appearing star to illuminate your imperfect ideals to the more perfect ones that are yours to enjoy after a period well spent in this school and life's school that is to follow throughout your natural sojourn here.

All these teachers are your friends, and feel themselves personally responsible for your progress didactically, morally, and for your citizenship. Why shouldn't they? 'tis only the natural instinct a teacher bears to his pupil, kindred to the parental in care,

and substantially placed socially, to further you and yours in the building of country and state.

This is a day of specialties in all the departments of business life. This school is the first and chiefest asset to any department in which you may identify yourself hereafter. Every department here bears its quota of responsibility in the structure of your endeavors in the future.

Teachers, lawyers, salesmen, farmers, doctors, fathers and mothers' places are to be filled by you; then reflect the credit each duty is due by the high standard of your present example.

Success is an ideal to be striven for in any undertaking, and the most vital force in its production is, the mastering of small details.

Look at the railroad presidents of this country, all have been section hands, and common laborers. Why is that true, simple enough—they learned the all important ground-work—the little things—and the value of honest labor and the value of money.

Just so here in this splendid school, where these teachers no doubt dwell upon the smaller things and constantly magnify their indispensable importance.

Success of yesterday will not be success in the future, because the requirements become greater from day to day, as the standards of efficiency must meet the needs of this advancing age.

If its farming, remember boys, no field of endeavor holds more promise. and the millions of mouths to be fed will certainly require the application of science in a broader application than the past has known.

Ideals are standards of endeavor looking upward. concentration of thought materialized by action.

An education is within the reach of all, excuses are out of fashion nowadays. However, each bee hive has some drones and perhaps but few schools are free of a laggard; but as the bees handle the drones the ambitious will drive the laggard to the creeks and woods to associate with turtles and tadpoles where they properly belong, and are of little more importance.

If this school reflects any special credit to standards that speak for themselves, let's give praise where credit is due, for when melodies and soul-stirring airs are the occasion, we rise to cheer the labors and the compliment due this department.

The new department added to this institution has a field which vitally affects more people than any other; and a field which is rapidly coming into its proper place in the school and splendidly filling a long felt addition.

Domestic science is a science, and it reflects

still further ideals of this splendid age and its wants and needs have long been felt. I expect a few years in this department will be the means of doing away with dyspepsia truly preventable, and affecting more people than any other malady of the present time.

Let us believe, as in all other things, being so splendidly accomplished here, this department will be the pride especially of every girl here, and the boys are to be the final judges, don't forget that; so three cheers for the cook.

Health brings us to the sublime hope of our endeavors, the price of which is within reach of all, longevity, the flower of a life well spent, and its fragrance bespeaks preservation's successful termination in the community where ideals were known.

DIAGNOSIS AND TREATMENT OF LATENT NEPHRITIS.*

B. J. H. HOUNSTEDT, Ft. Thomas.

Of the diffuse or parenchymatous nephritis I will not speak as that variety eventually becomes a chronic interstitial type as the disease progresses.

Pathologically, chronic interstitial nephritis is variously termed cirrhosis of the kidney, chronic productive nephritis without exudation, contracted kidney, small white kidney, etc.

Etiologically it may result from arteriosclerosis, gout, alcoholism, syphilis, or it may occur spontaneously. It may occur in hearty eaters where a habit of high arterial tension exists. It occurs principally in middle life or old age, and occasionally met with in young children.

Its symptoms are manifested in the uropoietic, circulatory, respiratory, nervous and digestive symptoms, and in the eyes, ears and skin. Increased arterial tension is the most important and may be the only cardinal symptom. Often associated with it are headache, palpitation, bronchial cough, tinnitus aurium, dizziness, malaise and anorexia. We often find present hypertrophy of the left ventricle, with eventual enlargement of the entire organ, and corresponding change in the apex beat, and a reduplication of the first sound and an accentuated second sound over the aortic area. Later a systolic murmur, heard at the apex and transmitted to the left may develop; and towards the end, when dilatation succeeds and compensation fails, any or all of the symptoms of chronic endocarditis and myocarditis may appear.

Retinitis, choked disc, and amaurosis are

frequent ocular symptoms and ringing in the ears and sudden deafness may occur.

Anorexia, nausea, vomiting and diarrhea are always present in greater or less degree. Tongue may be red, dry and cracked or moist and glazed, or covered with a brownish scum, or furred or foul. Uremic, and often cardiac dyspnoea is of frequent occurrence; bronchitis is a very rare accompaniment; oedema of the lungs is often seen towards the last; and oedema of the glottis may occur. Skin may be dry and itching "pins and needles" cramp, numbness or eczematous. When oedema of the skin is present there is merely a slight puffiness of the feet and ankles.

The diagnosis of interstitial nephritis should be easy. If we examine the urine we will find increased quantity, low specific gravity, small albuminuria, delicate hyaline, pale granular casts and hypertrophy of the left ventricle. These conditions alone would suggest interstitial nephritis; and be further confirmed by high arterial tension, constant weariness, slight swelling of feet, drowsiness, frequent headaches confused intellect, dyspeptic symptoms, obstinate nausea, delirium, coma and convulsions. There may, however, be present in the urine, albumin and casts in individuals with high arterial tension, without any renal lesions; but where part or all of the above symptoms are present with albumin and casts there can be no doubt as to the diagnosis.

TREATMENT.

As to the treatment, the symptoms themselves ought to suggest the manner of treatment.

Diet.—A sufficient amount of food of good quality is desired, and those articles containing the minimum quantity of nitrogen should be preferred. Where large quantities of meat are eaten, uremia has been more frequent, whereas when the appetite has been bad and little food has been taken, uremia is uncommon. Protein food should be limited while vegetable food should be drawn upon. Skimmed milk, two or three quarts a day, may be taken; this can be diluted with vichy, or carbonated waters. Cereals with cream and sugar, bread not too fresh, or hot, or bread and milk, egg once a day or small pieces of meat. Fruits are good while tea and coffee in moderation need not be excluded. Alcohol should be prohibited, except in habitual drinkers the reduction must be slow and if necessary continue small amounts of alcohol.

Fresh air and moderate exercise are essential. The body must be kept warm, and avoid damp and cold. Woolen or linen garments next to the skin, aids the elimination of the toxic products by the warmth produced thereby. Cold baths are dangerous, while a

*Read before the Campbell-Kenton County Medical Society.

daily warm bath at bedtime and an occasional turkish bath are advantageous. A warm, equable climate is the test.

Avoidance of bodily and mental fatigue is essential, as it has been known to be the exciting cause of uremia and death, especially when associated with free eating and drinking.

Our drugs are limited in this disease. Strychnine and iron to combat anemia and weakness. In the giving of iron we should be guarded. In a contracted kidney, iron is a harmful drug, it locks up the secretion, causes headache and increases the danger of uremia, only when there is evident anemia, as shown by the blood examination should it be used. Eliminate by stimulating the secretion of the skin. Warm baths, and if the disease is not too far advanced, Turkish baths are good. Protect the body from cold by woolen under-clothing.

Early in the disease when the urine is already free, diuretics are not indicated, but later in the disease, when the heart begins to fail and the urine is scanty, both diuretics and purgatives are indicated. The bowels should be kept regular by the use of an occasional blue pill, magnesium sulphate, or the natural aperient waters.

Where there is high arterial tension with hypertrophy of the left ventricle, especially if there is throbbing headache, with flashes of light at each pulsation, tension should be lowered. This must be done with caution and with rest and hygiene rather than drugs. For high arterial tension alone, nitroglycerine is valueless unless given in large doses, which is not preferable. Aconite or veratrum viride given with caution will do much in lowering the tension.

Dyspeptic symptoms are best treated by diet, and regulation of exercise, the use of nuxvomica and one of the mineral acids sometimes are indicated.

It is advisable to examine the urine for acidosis, and when present Fisher's alkaline solution, by the Murphy method, or (enteroclysis) is indicated. Also large doses of sodium bicarbonate frequently repeated till we have a free flow of urine, alkaline in reaction. Uremic symptoms may call for the instillation of Fisher's solution intra-venously and should be borne in mind.

The treatment resolves itself into the simple proposition of relieving the kidney of as much of its function as possible. Fresh air, light exercise, warm body, skin active, bowels open, proper nourishment, rest when necessary regular hours, and the frequent examination of the urine.

OUR ESTIMATE OF THE PROSTATIC.*

By CARL LEWIS WHEELER, Lexington.

Owing to the insidious nature of "Prostatism" it is quite difficult to state just when the first symptoms become manifest, for evidently some time must elapse from the onset of the disease, until the patient definitely realizes that there is something wrong, and he awakes to the fact that the act of urination is now not like in the days gone by, but is convinced that now "making his water" is as important as making his bread. A robust and healthy individual as he thinks he is, he finds himself disturbed in the midst of profound sleep, by an irresistible desire to micturate, and is compelled to rise and empty his bladder; this continues night after night, and gradually the calls grow more frequent, until finally it is necessary to arise four or five times each night to satisfy them. Sound sleep is banished on account of the irritability of his bladder.

By this time he finds that he is called upon to empty his bladder more frequently in the day time, and the calls are so urgent that they cannot be resisted for more than a few moments; and when he arrives at a convenient place to urinate, he finds that the stream is slow in starting; straining is of no avail, but a hindrance—the stream lacks force and volume, and terminates in dribbling.

Hypertrophy, unaccompanied by cystitis, usually gives rise to a string of symptoms, which are painless in character until quite late in the disease, unless there is some infection of the urinary tract, or acute retention occurs.

It is very essential to differentiate between symptoms due to enlargement of the prostate alone, and those due to enlargement of the prostate complicated by cystitis.

For instance, there are quite a number of patients in whom hypertrophy of the prostate is practically symptomless. They live to advanced old age, without suffering a moment's inconvenience from it, or ever being aware of its existence.

The increase in the growth of the prostate being so slow and gradual that it does not stretch the fibrous capsule, giving rise to pain like in an inflammatory or a malignant process.

There is no obstruction at the vesical neck, or if so, only so much that the bladder (which has been endowed by extra muscular strength) is easily capable of overcoming it without difficulty.

In voiding, there is never any effort at straining; there is no congestion of the m-

*Read before the Fayette County Medical Society.

cosa lining the vesical neck—nor is there any irritability of the bladder whatsoever, or impairment of the general health.

Now fancy there is an acute "cystitis" ingrafted upon this type of hypertrophy, with all of its concomitant symptoms?

Suppose you are called as counsel and his fate rests upon your opinion and advice?—would you say "choose you this day between prostatectomy and catheter life?" *He will get by without either.*

Case I.—B. F. C., August 12, 1916, age 82. Has been getting up for more than ten years at night to empty his bladder. Day frequency about every three hours, which has been without effort, pain or discomfort.

A painful retention, complete for six days, for which he had been relieved by catheter every four hours.

His physician had advised an immediate operation and already arrangements were being made for the "hike" to Baltimore. Responding to the call of sixty miles (which was made in an automobile) and upon arrival I found the patient sitting out in the yard perusing the morning paper.

Examination was as follows: Prostate (per rectum) a fair sized adenoma. Right lobe a trifle larger than the left. The inter-vesicular groove distinctly marked. Contour of both lobes regular. No stony areas.

Cystoscopy: Capacity 350 c.c. with comfort. Cystoscope was easily introduced. Mucosa somewhat thickened and congested, with heavy trabeculation. Trigonitis of moderate degree. Vesical orifice symmetrical, with moderate bulging intra-vesically of both lateral lobes. Marker median cleft. No stone. Urethral length, nine inches.

Ureters easily catheterized and specimens from both kidneys showed a haematogenous colon bacillary infection.

Function: Phthalein 1 c.c. intramuscular showed in sixteen minutes. First hour output 15 per cent.

Diagnosis: Prostatic hypertrophy, without obstruction, and upon which was supplanted a colon cystitis, congesting vesical neck and resulting in retention.

A soft rubber catheter 18 F., was anchored to pnt bladder at rest and the following internal medication,

Urotropin 7 1-2 grains one hour before meals.

Acid sodium phosphate, 20 grains two hours after meals in glass of lemonade.

Within ten days there was restoration and control of bladder function. Patient regaining bladder comfort as prior to infection and has remained well without aid of either catheter or operation.

The ages of our prostatics range from sixty to seventy-five years, although we see them

over eighty and frequently we meet them from fifty to sixty years of age. The disease is rare under fifty.

These age limits furnish us valuable data in sizing up prostatic enlargement, for under forty true hypertrophy does not exist, and at this age these ailments must be classed as acute prostatitis, tuberculosis or sarcoma. And these conditions are so rarely encountered in men over fifty, that they can be excluded.

From forty to fifty carcinoma of the prostate occasionally occurs; while adenoma is almost unknown. After fifty there are only two common causes of enlargement of the prostate; namely, carcinoma and adenoma.

Frank Kidd, London, states that about one out of every ten cases will be carcinoma, but I am afraid that the true ratio will exceed twenty per cent. in favor of malignancy.

In conversation with Dr. Hugh Cabot he stated that he had seen about fifty cases of carcinoma of the prostate during the last half of the year 1915, in whom he had refused operation.

The time has arrived when we must awake to the fact, that there are too many prostates being removed, which are suspiciously malignant, or potentially so, and our suspicion only being aroused by the postoperative report of the pathologist.

Carcinoma may arise *de novo*, or in the midst of an adenomatous prostate. The diagnosis is not at all difficult in the majority of cases, if the surgeon's mind is aware of the fact, and his finger is on the alert for minute indications.

In the vast majority of cases, all carcinomatous areas are of a peculiar stony hardness, which can only be detected by constant experience of prostatic palpation; and in the earlier stages, such a small area may be detected in the midst of an ordinary adenoma, or in an otherwise apparently normal prostate.

Malignancy bursts through the capsule of the gland, along the posterior-superior border, and involves the sheaths of the vesiculae and cellular tissue beneath the base of the bladder; so that instead of a notch being left at this point; a hard slightly nodular plaque will be felt filling up the gap. Hard irregular outlying nodules of growth are very characteristic, but must not be confused with the hardness of smooth rounded calculi and phleboliths.

When the growth is far advanced, it becomes fixed, as if held in a vise to the floor and sides of the bony pelvis.

The cystoscope is gripped as it passes through the prostatic urethra with a peculiar, hard, grating sensation, and when passed may reveal a nodular, flattened, irregular median bar lying behind the internal meatus, or, rare-

ly, an ulcer formed by the growth which has burst through into the bladder.

The hardness of the growth can be well appreciated, if a finger be inserted into the rectum while the cystoscope remains in the bladder.

Case II.—J. A. C., July 4, 1916) age 64. Bladder symptoms for more than two years, and a haematuria which had existed for six weeks. Had been getting up several times every night for more than a year. Day frequency less than two hours. Had been using catheter for several months.

Examination: Prostate (per rectum) not much enlarged, irregular stony areas marked; prostate seemed fixed, as if glued within the pelvis. There was a mass of infiltration running backward under the bladder and involving the vesicles. The inter-vesicular groove was obliterated by small nodular mass. The growth had burst beyond the confines of the capsule and had involved the bladder-floor.

Cystoscopy: Capacity 250 c.c. The cystoscope was passed with some difficulty, and was grasped in the posterior urethra with a very peculiar dry grating sensation with some little bleeding; but using irrigating cystoscope, the distending media was soon cleared, and I was able to get a fair view of the bladder.

To the right and within the trigonal area, there was to be seen a ragged irregular infiltrating ulcer, showing that the growth had already penetrated the vesical wall.

Diagnosis: Carcinoma of the prostate, involving bladder.

Opinion: Inoperable.

Patient died few weeks later.

In the meantime, a suprapubic cystotomy was done under local anesthesia for drainage and the relief of bladder distress.

Case III.—E. B., May 4, 1916, age 62. Catheter life for more than three years. Complains of a burning sensation during urination all along the urethra. Dull aching pain over the sacrum and down the inner aspects of the thighs.

Prostate (per rectal palpation) rather large and irregular, with stony areas throughout entire gland, but more especially marked within left lobe. Prostate was immovable, and seemed to be wedged within the pelvis. There was no infiltration running backward under the bladder, although the inter-vesicular groove was obliterated.

Cystoscopy: Capacity 400 c.c. The cystoscope was passed with some difficulty, and especially was noted that same peculiar dry grating grip as the instrument passed through the prostatic urethra.

Bladder mucosa showed thickening, and of a dull gray color, with heavy trabeculation. Ureteral orifices rigid. To the inner aspect of

each ureteral orifice, and posterior to the inter-ureteral bar, were two diverticulae, of at least 35 or 40 c.c. capacity each. And each with an orifice communicating with the bladder which would easily admit the tip of little finger.

An operation for the obliteration of these two diverticulae was a piece of very tempting surgery; but what would be the use in the presence of a malignant process within the prostate which is liable to burst through into the bladder wall at any time?

'Tis true that in time that the diverticulae would increase to such size as to make such pressure upon the ureters, stimulating valve action that would ultimately damage kidneys by partial ureteral occlusion. A "vicious circle" which could not be broken.

Diagnosis: Carcinoma of the prostate, yet confined within the capsule. Bilateral diverticulae of the bladder.

Opinion: Inoperable.

Patient died within two months. Death due to combination of back pressure and infection of kidneys, with metastases.

In our routine work we can divide our Prostatitis into three classes, as follows:

1. The Irritable Bladder Type. These are the patients who give a history of painless nycturia and urgent day frequency, covering a period of two years, and eventually seek our advice during an attack of retention.

2. The Painful Retention Type. Patient in good health (between fifty and sixty) is suddenly seized with an intense desire to urinate, accompanied by painful cramps in hypogastric region. Hypodermic of morphine and hot bath fails to relieve. Catheter is the only available means of relief.

The difficulty disappears for the time being, probably for a few months to a year. These attacks return at various intervals until the retention becomes complete and permanent. Now catheterization at regular intervals becomes a part of his daily life.

In these patients we find the bladder muscle in good state. It is painful because the bladder muscle is capable of undergoing cramping contractions.

This condition is due to congestion of the prostatic urethra, provoking spasm of the sphincter, incident to alcohol, exposure to cold or some bacterial invasion of the prostatic urethra.

3. The Painless Incontinence Type. This patient is a cadaveric, wasted old man; and has been suffering with "lumbago and stomach trouble" for several months. He has intense thirst and nausea, with loss of memory. His bladder is distended up to his umbilicus, with a desire to "pass water" every few minutes. There is a continuous overflow soiling his clothing, night and day. Intermit-

ting pulse. Blood pressure around 200 m. g.

Here is a painless flaccid bladder, containing pints of urine, with long continued back-pressure upon the kidneys. Patient is on the very brink of disaster. If this patient should be cauterized and the bladder completely and hastily emptied, it would result fatally within ten days, as the kidneys would be unable to withstand the sudden release of tension, and suppression would be the result.

This type of bladder should be carefully and slowly emptied, the process carried over a period of two or three days. My rule is to withdraw twelve ounces at each catheterization until the bladder is completely emptied.

Long continued back-pressure results in vesical and ureteral atony, and ultimately, fibroid degeneration of the kidneys; the chief signs of which, are aching pains in both renal angles, termed "lumbago," urine pale and of low specific gravity—polyuria, subnormal temperature, headache intense thirst, nausea and loss of appetite, with renal function extremely low.

A week or two in bed, under catheter drainage, with urotropin and acid sodium phosphate internally, including plenty of fluid intake; sometimes these patients will so improve in general health that an operation may be contemplated with hope of reasonable success. (See Young and Frontz, "Prostatectomy in Unfavorable Cases," G. U. Transactions 1916. A. M. A.)

Case IV. Mr. M., Sept. 1, 1916, age 66. Last December, weighed 212 pounds. Now weighs 164. Been getting up at night to void for three years. Day and night incontinence existing for several months. Clothes and bed always wet—wearing pads. Appetite gone. Some "stomach trouble." Has taken various tonics, but does not "regain his strength."

Examination: Prostate (per rectum). Large symmetrical adenoma. Bladder up to umbilicus. Only a Wishard flat catheter 14 F. would enter bladder. Twelve ounces of clear pale urine was withdrawn. Albumin marked. Specific gravity 1010. Catheterized ever four hours (withdrawing 12 ounces) until bladder was completely emptied. Thereafter catheterized every six hours for six days. Pulse 90-100. Temperature 97.6. Blood pressure 205 m.g. An 18 F. soft rubber catheter anchored and continuous drainage for two weeks.

Phthalein, 1 c.c. intramuscular.

One hour—no show.

Catheterized twelve hours later. 3 per cent.

Diagnosis: Large adenoma of the prostate. Vesical atony and fibroid degeneration of the kidneys. Function dangerously low.

Patient was advised to return home, and to be catheterized three to four times in twenty-four hours.

Died six weeks later of renal insufficiency.

Two channels are open to the prostatic; namely, *prostatectomy or catheter life.*

In Fibro-adenoma of the prostate—with fair surgical risk, the operation is most ideal. In carcinoma of the prostate, the surgeon had best *think and back off.* Radium offers only hope—(if any).

My advice would be to try radium. Certainly there has been cases reported in which the results have been very gratifying.

Mortality in catheter life far exceeds prostatectomy. Watson collected 207 cases of first catheterization in which the histories were followed up, and found that 8 per cent had died within the first month, which compares most unfavorably with the mortality of prostatectomy, as statistics show, does not exceed six per cent. It would have been of much interest, had these cases been followed twelve months, for an estimate of mortality of catheter life, within first year.

Catheter life is only to be advised in carcinoma of the prostate, unaccompanied by stone, hemorrhage, complete retention with difficult and painful catheterization.

Surgical risk depends upon careful examination of heart, lungs and estimation of kidney function.

KIDNEY FUNCTIONAL TESTS.

In a recent letter of inquiry to Dr. Hugh Cabot, asking his views regarding comparative value of kidney functional tests, and also his opinion regarding vaccines, his reply is as follows:

"Phthalein is the most valuable test of kidney function for general use, owing to its ease of application, the simplicity of estimating the percentage of excretion and its satisfactory accuracy in giving information of the functional capacity of the kidney within very definite limits. It is particularly valuable in estimating the relative work of the two kidneys. Taken all in all it is wholly superior to any other present method.

Ambard's coefficient of urea excretion is a valuable method but the work done on it in comparison with phthalein showed that the results of the two coincided with very great accuracy. It therefore follows that as it is a highly complicated method it has no important advantage over phthalein and many disadvantages.

Estimation of blood creatinin and retained nitrogen in the blood are valuable methods of deciding whether or not kidney insufficiency exists. The phthalein output of a kidney may be low and yet it may be that kidney tissue of an entirely sufficient amount to support life safely still exists. The study of these bodies in the blood is chiefly of value in a group of cases where the phthalein output is

low and yet where kidney sufficiency appears to exist.

It is difficult of execution, and requires a well equipped laboratory and a trained chemist, and therefore has very definite limitations. Personally I do not employ them except in cases where the phthalein excretion is low and kidney insufficiency may exist.

Vaccines. Our work upon the use of autogenous vaccines in preparing the patient for prostatectomy is still incomplete. On the other hand, we have evidence sufficient to strongly suggest that their employment to a point which definitely raises the patient's immunity as shown by his ability to clump the organisms, is a very important method of protecting against postoperative renal infections with the colon bacillus. Further work and particularly confirmation of our work by others, is highly desirable."

A CONSIDERATION OF SOME OF THE PRESENT PROBLEMS OF SYPHILIS.*

By W. A. PUSEY, Chicago, Illinois.

The discoveries which have been made in syphilis since 1903, when Metchnikoff and Roux demonstrated a method of reproducing the disease in animals, have revolutionized not only our knowledge of syphilis but the principles and methods which we use in treating it.

The great additions which have been made to the management of syphilis are:

First—The diagnosis by demonstration of the spirocheta pallida.

Second—The diagnosis by the Wassermann reaction.

Third—The use of the Wassermann reaction as a criterion of the effect of treatment.

Fourth—The prophylaxis of syphilis by the injection of 33 per cent. calomel ointment.

Fifth—Treatment by salvarsan and its derivatives.

It is of the greatest practical importance to have a clear estimate of the value of these various procedures, and I thought that I could not use any time before you this evening to better advantage than in subjecting them to brief critical analysis.

THE DIAGNOSIS OF SYPHILIS BY DEMONSTRATION OF THE SPIROCHETA PALLIDA.

The presence of spirocheta pallida is the first definite proof of syphilis that can be demonstrated. They are abundant and easily demonstrable at the first appearance of the initial lesion: before the Wassermann is positive, and before there is any characteristic adenopathy or any eruption. They become

less abundant as the chancre ages and somewhat less easy of demonstration, by my experience agrees with that of many others that they can be demonstrated in practically every untreated, unhealed chancre. This is not the case if the lesions have been treated, for antiseptic applications, particularly mercurial applications, greatly increase the difficulty of or prevent their demonstration.

As everyone is agreed on the importance of as early a diagnosis of syphilis as possible, the serious question at once arises, how distinctive are the characteristics of the spirocheta pallida, and how much reliance can be placed upon the diagnosis of syphilis solely upon its demonstration?

Certain spirochetes resemble more or less closely the spirocheta pallida, spirocheta refringes, and spirocheta balanitidis found in chancres and mucous patches; spirocheta buccalis and spirocheta dentium in the mouth; spirocheta pseudopallida in cancerous ulcers, and the spirocheta pertenuis of yaws. The spirochetes most resembling spirocheta pallida are spirocheta dentium in carious teeth, spirocheta pseudopallida, and spirocheta pertenuis.

Most workers of experience believe that the spirocheta pallida can be definitely distinguished from these organisms, and with that my experience agrees. But it must be emphasized that a reliable recognition of the spirocheta pallida under the dark field illumination or in stained specimens requires a practiced, careful observer who is habitually doing this particular work. Under these conditions the diagnosis of syphilis by the demonstration of spirocheta pallida can, I believe, be reliably established. In so important a situation as the determination of syphilis in the first days of a chancre, from the recognition of spirocheta pallida alone, I believe it is desirable to determine the character of the spirochetes by two independent observers, in order, so far as possible, to eliminate the personal equation. This I have done in numerous instances, and I have not had disagreement in the decisions.

I do not know of the unreliable work in the diagnosis of syphilis from the spirochetes, as I do from the Wassermann reaction—due, I believe, to the fact that the demonstration of the organism is not commonly relied upon for diagnosis—but this is a method of diagnosis easily open to error and abuse. I do not believe the ordinary laboratory man who is not familiar by long observation with the various spirochetes can be safely relied upon to differentiate the spirocheta pallida in critical situations. The demonstration of spirochetes under dark field illumination is one of the simplest laboratory procedures, but the reliable differentiation of the spirocheta pallida is not simply a matter of laboratory technique.

*Read before the Jefferson County Medical Society.

The demonstration of *spirocheta pallida* in secondary lesions when other evidence of syphilis exists is a less critical matter. Here the demonstration is only confirmatory evidence, and it has only the value of one fact in establishing the diagnosis. Occasionally this is an important fact in determining the character of confusing lesions, particularly on mucous surfaces or at mucocutaneous junctures, occurring in the course of active syphilis.

Unfortunately for diagnostic purposes the spirochetes are so few and so difficult to demonstrate in late (gummatous) lesions that their demonstration is not a practical method for establishing the character of these lesions.

THE WASSERMANN REACTION IN DIAGNOSIS

On the question of the specificity and reliability of the Wassermann reaction there is no need to waste space. The world is agreed in the affirmative upon these points. With the exception of a few now well-recognized conditions, which fortunately are not likely to lead often to confusion with syphilis, the Wassermann reaction is specific for syphilis, and can be elicited in most cases in which the disease is present. It becomes positive only when the disease has become generalized; the reaction is present, therefore, only in about 40 per cent of cases at the appearance of the initial lesion. During the three weeks after the appearance of the initial lesion it becomes positive in about 75 per cent of the cases, and when the cutaneous manifestations of the disease become well established, it is positive in practically all untreated cases. In late syphilis the reaction is positive in about 80 per cent of cases. In latent cases it is positive in about 50 per cent.

In spite of the remarkable trustworthiness of the Wassermann, syphilographers generally, I believe, are conscious of many serious mistakes which are occurring in the practical application of it in diagnosis. These mistakes arrange themselves in three groups:

1. The diagnosis of syphilis from supposedly positive but actually incorrect Wassermann's in the absence of syphilis.

2. The failure to recognize syphilis because of a negative Wassermann.

3. The reliance upon the Wassermann in conditions in which the presence or absence of syphilis has no practical bearing upon the lesion under consideration.

1. A positive finding in the absence of syphilis, of course, should not occur with a trustworthy reaction. The fact remains, however that the mistake of reporting a positive Wassermann when actually it does not exist and in the absence of syphilis, does occur, and, I believe, not infrequently. I have had this occur more than once in my experience in cases in which the lesions under consideration were not syphilitic and in which Wasser-

mann's made in my laboratory and, as a control, independently by another reliable worker, were negative.

How can such mistakes occur? Simply from the fact that the Wassermann reaction—absolutely trustworthy in itself, when positive, if correctly made and correctly interpreted—is done by human hands, and human hands are fallible. Let a laboratory man speak upon this point: "One need not emphasize the fact that in the laboratory there are no infallible methods, a fact which is most glaringly true of the Wassermann reaction. I make this statement taking for granted that the worker is experienced" (Kaplan); and then he recites for illustration a case in which from one serum three reports were obtained; a positive from a tyro; no decision from the second, negative from the third. Again: "In the Wassermann reaction the stumbling blocks are many and can be overcome by experience and practice only. The beginner makes many non-leucic sera positive, the theoretical worker does the same to a lesser extent, and the mature worker fails to report many syphilitic sera as positive."

The Wassermann reaction has many factors in it to give rise to error, and a reliable Wassermann, therefore, requires experience, careful attention to technique and to controls, and care in interpretation of results. With such requirements it is not surprising that errors occur with careless or immature workers. This is true of the original Wassermann; it is much more true, as nearly all workers are agreed, if the simplified modification of the Wassermann is used.

2. Inaccurate work may be responsible for some negative Wassermann's in the presence of syphilitic lesions, but this mistake of reporting the Wassermann negative when it is actually positive has not been brought to my attention in the way the grosser opposite error has.

Without error in the reaction a negative Wassermann is not rare in late (tertiary) active syphilis; it occurs in 20 to 30 per cent of the cases. Even in cases of treated active secondary syphilis one sometimes gets a negative Wassermann. It follows therefore that to rely on the Wassermann alone to make a diagnosis of syphilis is to court trouble, and this is the mistake that is constantly being made. It is not a rare experience to see a frank syphilide in the skin left unrecognized and untreated, as far as efficient treatment is concerned, because the Wassermann is negative. And if this occurs with cutaneous lesions of syphilis it surely occurs with internal lesions.

3. The third error, relying on the Wassermann in conditions which have nothing to do with syphilis, we in dermatology occasionally see. In epithelioma, especially epithelioma of

the tongue, in lupus, in syeosis, in chronic eczemas of the hands, in various sorts of generalized eruptions which surely had nothing to do with syphilis—scabies, for example—it has been my experience to see much useless puttering over Wassermanns and in some cases, which happened actually to have syphilis, much mental perturbation because non-syphilitic lesions had not yielded to syphilitic treatment. The syphilitic, of course, is not immune to other dermatoses; he is actually predisposed to some non-syphilitic lesions, as epithelioma of the tongue; and when one goes to giving weight to the Wassermann in non-syphilitic dermatoses in syphilitic subjects he is soon hopelessly confused.

The deduction to be made from these errors is that we should not neglect other forms of evidence. That unfortunately is the tendency whenever any laboratory test becomes available in diagnosis. I suspect there are few men, with the exception of thoroughly mature laboratory men themselves, who have not a little superstitious super-regard for laboratory findings as compared with clinical observations, when as a real fact they are more open to error and more in need of the qualities of experience and maturity of judgment than are clinical observations.

Nothing is surely more true than that the Wassermann in diagnosis must constantly be checked and compared with the clinical findings. If they are neglected, reliance upon the Wassermann must inevitably involve one in serious mistakes. As a matter of fact the lesions of syphilis upon the surface and at the orifice of the body are, as a rule, perfectly characteristic regardless of the Wassermann; and if these characteristics are neglected or not known, the observer who depends upon the Wassermann will overlook at least one case in every five of them.

In considering the pitfalls of the Wassermann as it is practically applied, no suspicion arises as to the real value of that reaction. Carried out with skill and care, and interpreted with appreciation of its limitations, a vast accumulation of experience has demonstrated it to be a perfectly trustworthy test. But it is only one fact, and its value is nearly always as confirmatory evidence of syphilis, of which there is usually abundant clinical evidence also to be found if sought with reasonable intelligence and care. It is the rarest experience to have nothing to indicate syphilis except the Wassermann; and, when one hangs a diagnosis of syphilis on that evidence alone, he should remember his diagnosis hangs upon a single thread of whose strength he should be perfectly certain. And even when he is certain of his positive Wassermann, if he does not know, or consider, his clinical condition, the patient's trouble may still be a pus in-

fection, or tuberculosis, or the itch, or some other non-lentic disease. The Wassermann is not a satisfactory substitute for clinical knowledge.

THE WASSERMANN AS AN INDEX OF TREATMENT.

Following the great authority of Neisser, the Wassermann is widely used as an index of the efficacy of and of the necessity for treatment. Neisser's position is this: A positive Wassermann is proof of active syphilis and of the presence of living spirochetes; therefore, a positive Wassermann is an indication for specific treatment. As a corollary of this the efficacy of treatment may be judged by the effect upon the Wassermann.

"Conversely a negative reaction, which means the restoration of the serum to its normal state, signifies generally if not complete destruction of the parasites at least the establishment of a condition of equilibrium between the host and the spirochetes, so that the latter assumes the character of harmless saprophytes. If any treatment short of complete sterilization is to be of value it must maintain this relationship; hence the Wassermann reaction should be used to control the treatment, as it is usually the most subtle indicator of a disturbance of equilibrium with a tendency to the assumption of pathogenic activity on the part of the spirochetes."

This quotation from Browning and McKenzie states well the position of those who make the Wassermann the basis for the so-called "biologic" treatment of syphilis.

It is not established beyond any possible doubt that a positive Wassermann means active syphilis. This is, however, probably true, all that can with scientific accuracy be said of a positive Wassermann is that it is evidence that the patient has had syphilis—the rest is, in part at least assumption.

Conversely it is not established that a negative Wassermann means "the establishment of a condition of equilibrium between the host and the spirochetes, so that the latter assume the character of harmless saprophytes." On the contrary, clinical evidence proves beyond doubt that at times with a negative Wassermann the spirochetes may possess their usual virulence. All experience has shown that in 20 per cent. to 30 per cent. of cases of late active syphilis the spirochetes are showing every evidence of pathogenic activity in spite of negative Wassermann. One may even see, as I have seen, mucous patches teeming with spirocheta pallida in late secondary syphilis with the Wassermann negative. So, it is not true beyond any possible question that a positive Wassermann means active syphilis, and it is certainly not true that a negative Wassermann means a condition of equilibrium between the spirochetes and the tissues, so that

the spirochetes have become harmless saprophytes.

It can be said, however, that the Wassermann reaction in syphilis is not a true specific antibody-antigen reaction. It is established that a specific syphilitic antigen is not necessary to the reaction, and a consideration of all the facts indicates that it is highly probable that the substance in the syphilitic serum that produces the specific Wassermann reaction is not true syphilitic antibody but some undetermined substance. This latter fact is exceedingly important in its practical bearing upon the question of the value of the Wassermann reaction as an index to treatment. For if it were true that the Wassermann reaction is an index of the amount of antibodies produced—in other words, of the immunity which the individual is building up to protect himself—one might well hesitate at using the index of the individual's acquired resistance to the disease. The subsidence of the Wassermann at the same time with the improvement in the condition of the syphilitic patient is one of the best evidences that it is independent of antibody and that it is a reliable index of the efficacy of treatment.

So far, we are upon reasonably safe ground: the substance and disappearance of a positive Wassermann is an evidence of improvement in the condition of a syphilitic, and as such is an evidence in favor of the efficacy of the treatment which he is undergoing. But it is only one piece of evidence; it is not conclusive and compelling evidence that is well; its value may be completely offset by the persistence of hyperplastic glands, by the persistence of cachexia, or, as at times may happen, the Wassermann-unheralded appearance of mucous patches or a late secondary eruption or a gumma. Its proper value then is as one symptom. It is, however, one symptom of great practical importance because it may be elicited when all others have disappeared. But as an index to the condition of a syphilitic patient or of the effect of treatment it is not entitled to preponderating consideration. It is desirable to see it disappear, as it is any other symptom, of syphilis; but it is also desirable that adenopathy should subside, that mucous and cutaneous and systemic symptoms should disappear, that weight should be maintained, and that the patient's feeling of well-being should be high. If some of these evidences of the disease persist, or recur, we are in no position to say that the patient is better off than he would be with a persistent or recurrent positive Wassermann.

To repeat then, a negative Wassermann is an evidence of the betterment of syphilis, but it is only one fact of evidence, and in considering its importance as an index of efficacy

of treatment it is entitled to weight only in its relation to all the facts in the case.

The fact that the Wassermann is not all-important is no reason why it should not be taken at frequent intervals during treatment and given reasonable weight. And there is good reason to believe that the sooner it becomes negative and the more constantly and longer it remains negative the better is the prospect of the case, as it is with a similar course of all other symptoms of syphilis.

How long must the Wassermann remain negative before we may proclaim a patient cured? We are in no position to answer that question by any positive statement. There is now a very strong pretension that undertakes to claim a cure of syphilis after the Wassermann has remained persistently negative for a certain length of time. There is some justification for this in the abortive treatment of syphilis, when, after the chancre, neither a positive Wassermann nor any other evidence of syphilis appears. Omitting however, these cases the clinical history of syphilis compels us to believe that we cannot give a positive assurance that the disease has gone never to return. We can give assurance, after several years of a negative Wassermann, of probable immunity, as we can after several years of symptomatic freedom.

How long then shall the Wassermann be taken? If one is to be logical, as long as one's clinical judgment indicates that the syphilitic should be watched; and in my opinion that means at intervals for life. Bayly, himself a pathologist, considering the question from the theoretical standpoint, gives under what seems from the phrasing of the last half of the sentence to be logical compulsion a good answer to this question: He says:

"A single negative reaction obtained with a serum of a patient undergoing treatment by mercury or salvarsan means little but that the patient is reacting to such treatment. A series of negative results taken at intervals of 3 to 6 months after all treatment has been given up is necessary before the patient can be regarded as cured (here he seems to lose heart—W. A. P.) and even then, until twenty years have passed, we cannot be absolutely certain that the disease is completely and permanently obliterated."

In other words, we are no more in position now than we have been in the past to ignore the possibility of future relapses in our lentic cases.

Space permits of only a brief consideration of the luetin reaction and the prophylaxis of syphilis by inunctions of calomel ointment, but no review of the newer syphilis can fail to mention them.

THE LUTIN REACTION.

Noguchi, using a suspension of killed spirocheta pallida which he calls luetin, has developed a cutaneous test in syphilis analogous to the tuberculin test. It depends upon the fact that in the presence of syphilis a reaction, showing as an inflammatory nodule, appears after the injection into the skin of a drop of diluted luetin in syphilitics who are in a condition of allergy to syphilis. My experience in about two hundred cases tested with Noguchi's luetin, like that of a number of others who have used it, is that it is a valuable addition to our means of diagnosis. It has the essential quality of specificity. The reaction does not occur in other conditions than syphilis, so that with proper care in technique and interpretation it is a reliable evidence of syphilis. It can rarely be elicited in early syphilis, but in late syphilis the reaction is positive in 50 per cent or more of the cases. And, fortunately, the reaction frequently develops in late syphilis with a negative Wassermann, so that it is a valuable supplement to the Wassermann test.

All considerations indicate that the test is a specific allergic phenomenon due to sensitization of the tissues to the virus of syphilis. The evidence for its being an indication of active syphilis is of the same character as that of the Wassermann, and as a diagnostic test and as a guide to treatment the same considerations apply to it that apply to the Wassermann. There seems good ground for believing that the luetin test will prove a useful supplement to the Wassermann in both of these functions.

THE PROPHYLAXIS OF SYPHILIS WITH CALOMEL OINTMENT.

Metchnikoff and Roux announced in 1906 that syphilis can be prevented with reasonable certainty by prompt inoculation of the infected point with 33 per cent. calomel ointment. Their experiments were of such great practical importance that it is surprising the substance has not created wider interest. In substance their findings are: The inoculation should be made within eighteen hours at the latest; at twenty hours it fails. The ointment should be rubbed in for a few minutes; in their most critical experiment it was rubbed in for five minutes. Calomel in the proportion of one part to two of ointment is effective.

Their experiments were carried out with scientific accuracy and the strictest care for control, and the results are entitled to respect. Very extensive attempts at the prevention of syphilis based on this method have been undertaken in the United States Army and Navy, and the experience is strongly confirmatory of the value of the method. This very

simple prophylactic procedure is one of the most important measures for the control of syphilis that has been suggested. The ointment used by Metchnikoff and Roux in their original experiments was 33 1-3 per cent. calomel and 66 2-3 per cent. lanoline. The ointment which they recommended is calomel 33, lanoline 67, vaseline 10. This base is stiff and it deteriorates. There is no evident reason why any of the ointment bases may not be used as well, particularly benzoinated lard. The inoculation should be made soon after suspected infection—within eight hours if possible; the ointment should be rubbed on to the area of suspected infection for five minutes and the surplus left on the surface.

Of course, Metchnikoff and Roux's effort was not the first attempt to prevent syphilitic infection by the use of a mercurial application. The importance of the work lies in the accurate demonstration of the effectiveness of a simple practical method of prophylaxis.

SALVARSAN IN THE TREATMENT OF SYPHILIS.

The man who has to do with the treatment of syphilis has never had a greater responsibility put upon him than exists in the question of the use of salvarsan in the treatment of his cases of syphilis. The claims for it have been so strong and the sponsors for it of such high authority that it has been no easy task to exercise restraint in giving one's patients the supposed benefits of it; and yet, there are many considerations which make one hesitate at its administration in the heroic way which has been advocated and which raises serious questions concerning the sum total of its usefulness. Although the time that it has been in use is short, compared with that necessary to get any final knowledge of the ultimate value of any means of treatment in a disease so tricky as is syphilis, we are already acquiring a fund of knowledge of salvarsan that enables us more satisfactorily to determine its place in the treatment of that disease.

The questions which confront us now in considering salvarsan indicate a different situation from that which we thought we were in when salvarsan was introduced and we had the hope that in it we had an effective remedy for the cure of syphilis. Now the questions are how effective is salvarsan in syphilis? How far can it be substituted for the older means of treatment, and what are the objections to its use? It is no longer *therapia sterilizans magna*, to use one of the striking terms we learned from Ehrlich.

At present the subject of salvarsan in syphilis can be considered from two standpoints: its value as a symptomatic remedy and its value as a curative agent. In addition we must consider its disadvantages. The disadvantages of it may be taken up first, for they

have some bearing upon all considerations of its therapeutic use.

DISADVANTAGES OF SALVARSAN.

Salvarsan has proved less toxic than the organic arsenic compounds of which it is the successor, but it cannot be said that it is entirely free from danger. While it is less toxic than its predecessors such as soamin and atoxyl, it has been shown again that arsenic is still treacherous, and that combine it as we may it is, when used in quantities, still dangerous. The minor disturbances from its use, fever, nausea, vomiting, diarrhoea, prostration, headache, low blood pressure, temporary cardiac disturbances, transitory albuminuria and the like, may be dismissed with brief courtesy. Some of them are important as suggesting contra-indications to the drug in particular cases, but they are of no practical importance in so serious a problem as the cure for syphilis.

The serious accidents are in a different category. They show that salvarsan may cause death or great permanent damage to important structures. Of the untoward effects, those upon the nervous system are of the greatest interest and importance. They go through the whole range from the simplest to the gravest accidents—herpes, herpes zoster, multiple neuritis, disturbances of memory or of orientation, epileptiform attacks. The most extreme form of nervous involvement has been fatal cases of haemorrhagic encephalitis, of which a good many have occurred.

The importance of these dangers should not be overemphasized. They are extremely rare—so rare that they are not worthy of consideration against the use of the drug in cases where there is a prospect of doing great good; but they are of sufficient importance to warrant their acting as a check against the indiscriminate use of salvarsan in cases in which the drug is of no greater value than are mercury and potassium iodide.

The other class of nervous accidents, following salvarsan are not assignable directly to its toxic effects, but occur through its effect on syphilitic lesions. These accidents may result from the sudden solution through the action of salvarsan of latent lesions in important structures—a process that probably represents the extreme degree of the Herxheimer reaction. Others of them correspond to the usual form of Herxheimer reaction, that is, the temporary stimulation of latent infiltrations by the drug, with the production of congestion and edema. If this occurs in meningeal lesions it may cause great temporary increase of intracranial pressure, or if in a cerebral endarthrititis it may result in occlusion of the vessels. It is this reaction of active specific lesions to salvarsan—which

is explained as due to the sudden liberation of supposed endotoxins—that accounts for most of the comas from salvarsan administered during the secondary period, when mild syphilitic meningeal irritation is likely to exist, and which compels caution in the use of salvarsan in the presence of syphilitic cerebral lesions.

The other form of nervous accidents following salvarsan are true syphilitic lesions in nervous tissues—the “neuroretidives” of Ehrlich nervous lesions of syphilis, with which we were familiar before the advent of salvarsan. It was vigorously maintained until recently that these nerve involvements were not more frequent after salvarsan than before it came into use. And to support this contention the whole previous study of syphilis was indicated and charged with simply having overlooked them. Now it is admitted that they are more frequent and this fact is taken into consideration in every scheme of salvarsan therapy. It is one of the facts which has compelled the simultaneous use of mercury. These neurorecurrences will be reverted to in considering recurrences in general.

One can, by dwelling on its dangers exaggerate the untoward effects of salvarsan. They are relatively infrequent and, because of their infrequency, relatively unimportant in comparison with the great gain of curing syphilis whenever we have any reasonable assurance of attaining that end by salvarsan.

SYMPTOMATIC ACTION OF SALVARSAN.

There can be no two opinions as to the specific action of salvarsan upon the active lesions of syphilis. It is a powerful symptomatic remedy. In rapidity of action it surpasses mercury or mercuric and iodides in many lesions; in other, it equals or is inferior to these older remedies. In early syphilis it has a quick effect upon the initial lesion, mucous patches and condylomas. Its action is quick upon the mucous membrane lesions generally. Its effect upon the cutaneous eruptions is not more prompt and not more complete than that of mercury. Upon the severe forms of early syphilis—large pustular eruptions, early gummatous lesions—its action is often strikingly effective. According to wide experience the effect upon the adenopathy of syphilis is surprisingly slight. Upon late gummatous lesions of the skin—apparently less upon gummas of the internal organs and upon bone lesions—the action of salvarsan is usually prompt and effective. It is extensive and intractable lesions of this sort that it has probably its greatest field of usefulness as a symptomatic remedy; and it is the more promising here because, for the healing of such lesions, moderate doses are sufficient and the use

of heroic quantities of the drug are not necessary, as in the attempts at radical cure with it. In the rare cases of severe early or late syphilis, which are not amenable to established methods of treatment, it undoubtedly is an effective addition to our means of treatment.

Aside from these latter and rare cases there is need to emphasize that salvarsan, as a rule, does nothing in gummatous lesions of syphilis that cannot be done effectively with mercury and the iodides—perhaps done slightly slower, but almost without any of the toxic dangers of salvarsan. For there is a tendency now to forget the value of the older means of treatment of these lesions. And so we constantly see reference to cases “hopeless by mercurial treatment,” “intractable to mercury and iodides” or “malignant.” As a matter of fact such cases, in which actual lesions of syphilis, are uncontrollable by mercury and the iodides and rational measures are excessive rarities. The treatment of such lesions by mercury and the iodides is, as a rule, one of the most definite feats of therapeutics. As to the effect of salvarsan upon the Wassermann evidence is conflicting. Experience in general is that except in the early primary stage it is not more effective in reversing a positive Wassermann than is mercury; in moderate doses it is less effective than safe, vigorous mercurial treatment.

CURATIVE USE OF SALVARSAN.

What of salvarsan as a cure for syphilis—the high result that was hoped for when it was introduced? How far has it realized this hope?

In the primary stage, at the appearance of the chancre, the evidence is strong that with salvarsan much more can be done than ever has been done before to abort syphilis: That is, when the syphilitic patient is seen before the disease has become generalized, while the spirochetal infection is localized around the initial lesion and before the Wassermann has become positive, it is possible in many cases to prevent the development of secondaries and hold the Wassermann negative by immediately instituting and vigorously carrying through a course of salvarsan and mercury treatment.

This abortive action of salvarsan in the primary period gives it a very valuable field of usefulness. As already indicated, about 40 per cent of cases of initial lesion, which can be distinguished by the demonstration of the spirocheta pallida, show a negative Wassermann for one or two weeks after the lesion's appearance. In these cases there is a reasonable prospect that syphilis can be aborted—a prospect that justified a vigorous attempt with salvarsan. This of course, makes the early diagnosis of the initial lesion a matter of great importance.

After this brief state of promise has passed the prospect of cure rapidly diminishes, and by the time the disease has become diffused throughout the body, as shown by the appearance of a generalized eruption, the prospect of abortive cure is very remote, and salvarsan should only be used, provided it is to be vigorously used, at intervals for at least a year and combined with equally vigorous use of mercury.

This position, I believe, is one which we are forced to by the logic of experience. And this position, quite aside from any hesitation about using the drug on account of its dangers, depends upon one fact—the increased frequency of severe syphilitic relapses, chiefly nervous, after the use of salvarsan. That there is an increased frequency of relapse of syphilis in the form of nervous lesions is now accepted. This is true as well, I believe, of relapses of gummatous lesions in the skin and elsewhere, but attention has been centered upon the nervous lesions because of their seriousness. Attention was early called to the frequency of nervous lesions after salvarsan by Finger, Rille, and others. The fact was bitterly denied by Ehrlich and his school, Benario, with industrious loyalty, going so far as to compile in a book the cases of nerve syphilis in the literature of presalvarsan days, in order to show that their frequency is not now greater than formerly. But from that position they have been compelled to recede, and now the increased frequency of “neurorecidives” is admitted even by salvarsan enthusiasts. Thus Nichols and Hough, Nichols being one of the earliest and still one of the most enthusiastic salvarsan advocates, say: “The question still remains why these relapses are more frequent under treatment with salvarsan than with mercury.”

Much difference of opinion has existed as to the reason for these relapses, some attributing them to the direct effect of the arsenic on nervous tissue, Ehrlich's school vigorously maintaining that they are lesions of syphilis. There is little doubt now that the latter view is correct, and in the reason therefor lies the strongest indictment to be made against salvarsan.

To complete the quotation from Nichols and Hough:

“Some authors hold that salvarsan damages the nervous system and thus predisposes to a localization of the spirochetes in this region. It seems to us, however, that these relapses can be satisfactorily explained according to Ehrlich's ideas. In a considerable number of cases in the secondary state the nervous system is infected with or without symptoms. * * * * * When such a case is treated with salvarsan the great bulk of spirochetes are suddenly destroyed. They are not simply

repressed, as is the case under mercury, and the resistance of the body is not gradually stimulated against them. There remains, however, small foci of spirochetes, especially in areas which are less accessible to the circulation, such as are found in the central nervous system. After a time these spirochetes begin to multiply, and they meet no resistance, such as is afforded by the continuous administration of mercury or by the natural defenses of the body, because these defenses have not been continuously stimulated by a large number of organisms all over the body. As a result the spirochetes which have remained grow with increased vigor and presently produce symptoms where they are located, in the nervous system."

And as we would expect if this last phrase were stated in the full form logically demanded by the "increased vigor," the spirochetes, growing without the opposition of the usual resistance developed by the infected organism, cause new lesions of severer type than is usual in early syphilis.

Stated in another form this proposition is as follows. Salvarsan destroys the spirochetes except those walled off in accessible localities; therefore, the body is not stimulated by a general infection to the production of those anti-substances which are its natural defense, and so builds up little or no resistance. Later these isolated foci of spirochetes grow, and because of lack of acquired resistance to them grow with increased vigor, and so produce damaging lesions. Finally their growth spreads beyond the isolated focus or foci and, as after the chancre, infection becomes general, while at the same time no natural defense has been built up. In other words, the patient who in the early course of his syphilis is treated vigorously with salvarsan but short of absolute destruction of all the spirochetes has his day of reckoning briefly postponed, but at the price of having to meet it later under adverse conditions.

Another explanation of the increased liability to the occurrence of gummatous lesions in inadequately treated salvarsan cases is that the use of salvarsan short of cure causes the spirochetes to become salvarsan resistant. Thus Luth, so recently as December 21, 1916, in the *Deutsche Med. Wochenschrift.*, Berlin, says:

"Tertiary manifestations of syphilis are being encountered now of a severer character than before the days of salvarsan. The latter is not responsible for this but it lies in the fact that the courses of salvarsan treatment are often inadequate. He explains why inadequate salvarsan treatment entails more serious results than inadequate mercurial treatment, saying that insufficient doses of salvarsan too small to destroy the spirochetes,

actually breed a strain of more resistant spirochetes, according to the biological laws of immunology. The patient is thus worse off than if he had been given no treatment at all. The spirochetes are more resistant and more virulent, and thus conditions for their attacking the nervous system are rendered more favorable. In the meanwhile the patient has been losing strength and may not then be able to produce antibodies enough to give a positive Wassermann reaction. The danger of breeding an extra resistant strain of spirochetes, by inadequate salvarsan treatment, is materially reduced when mercury is given with it from the beginning. He makes a practice of this, and he describes in detail. There is no doubt, he adds, that insufficiently treated syphilis runs a much severer course under salvarsan than in the old days of mercury alone."

I believe Erlich's explanation is correct and not the one which Luth repeats. But that is beside the point that I am trying to make. The point I wish to emphasize is that in cases of early syphilis treated with salvarsan we frequently see the occurrence of gummatous lesions—often serious gummatous lesions in the nervous system—that were very rare in the old days of mercurial treatment.

This is why the view is gaining ground that if the prospects are not good of cure from salvarsan, or if it is not to be given in the vigorous way necessary to have a chance of cure, it had better not be used at all in the early period of syphilis when the patient is building up his natural resistance.

This reasoning of course does not apply against its use as a symptomatic remedy for the treatment of the later lesions, long after the patient's specific immunity has been stimulated and utilized.

TO RECAPITULATE.

1. Salvarsan has real dangers; they are remote, but, when they occur, serious.

2. As far as can be deduced from our present knowledge there is no reason to believe that salvarsan will lessen the occurrence of late nervous lesions and some ground for fear that it may predispose to them, except in those cases in which cures the disease.

3. It is a powerful symptomatic remedy.

4. In cases in which vigorous treatment is begun before the generalization of the disease there is strong ground for believing that syphilis can be aborted. This possibly applied to a few early cases with secondaries.

5. In all other cases in the secondary period its "curative" use may do more harm than good.

As Brocq has said:

"Whatever be the power of the new arms which have lately been placed at our disposal

for the treatment of syphilis, the practitioner must clearly understand that the old rules of therapeutics have not undergone any change. He must grasp the idea that his duty is first and foremost to place the patient's organism in the best possible state to resist and thus minimize the virulence of the infection; that by a well-ordained hygiene he may reduce to a minimum the secondary manifestations and the tertiary liabilities."

THE ALBEE METHOD IN TREATING POTT'S DISEASE.*

By W. BARNETT OWEN, Louisville.

Tuberculous disease of the spine was first described by Percival Pott in 1779. However, the exact etiology was unknown until 1882, when Robert Koch discovered the tubercle bacillus. Prior to 1882 all cases presenting kyphosis were classified as Pott's disease; since then only such as have a tuberculous infection in the body of the vertebra are considered to be Pott's disease.

While much might be said concerning the symptomatology and the differential diagnosis I will only mention pain, weakness, awkwardness, stiffness and deformity as being the symptoms of greatest diagnostic value. In all cases the diagnosis should be confirmed by the X-ray, which always shows atrophy and less density in bone tuberculosis.

TREATMENT.

It is generally conceded that bone tuberculosis is a self-limited disease, provided fixation, support and protection can be continuously employed for a sufficient length of time, assisted by sunlight and the usual accepted reconstructive measures. Believing and working upon this basis, many operations have been employed to hasten bony ankylosis. External splints of many varieties have been used, and in a limited number of instances the disease has been arrested. However, the prolonged brace or jacket treatment is unsatisfactory for several reasons. First, it is impossible to completely immobilize the affected vertebrae. Second, it is impossible to enforce continuous and uniform application of the external splint, granting that it is properly applied, and in most instances it is not.

The longer it requires to produce bony ankylosis, the more extensive the bony necrosis which is productive of distressing complications, such as deformity, abscess, amyloid degeneration of the liver, paraplegia, and meningitis. It naturally follows that the earlier bony ankylosis is produced the sooner the disease will be arrested, and the unfortunate

complications and probably a fatal termination will be avoided.

In 1809 Merrem successfully transplanted bone and obtained healing in the skulls of animals. In 1858 Ollier, after extensive investigations in the use of the bone graft in both animals and man, concluded that fresh bony tissue, covered with periosteum, would remain viable. Subsequently, Macewen, Frankenheim, Cotron, McWilliams, Albee, and others, have made extensive experiments and histological studies, and have proven the viability and osteogenesis of the grafts when inserted by the proper technique.

The late Dr. John B. Murphy (*Surgery, Gynecology and Obstetrics*, May, 1913) said: "The graft, *per se*, does not possess any osteogenetic power; it merely serves an osteogenetic conductive purpose." Gallie (*American Journal of Orthopedic Surgery*, October, 1914) says: "In view of the controversy which is still being waged in the literature, it is interesting to note that these experiments show no difference in the value of fresh or boiled bone as a transplant, and no difference in the gross and histological changes incident to the introduction of autogenous and heterogenous bone grafts."

While I am confident that the graft is a framework through which new bone is regenerated, and that it does not live and continue to grow, yet as we know that ankylosis can be produced by such procedures it makes little difference, save from the standpoint of science, whether the bone graft has the power of osteogenesis, or whether it serves an osteogenetic-conductive purpose.

While the bone transplant (or splint under the skin) in the treatment of Pott's disease is a comparatively new procedure (only since 1911 has it been extensively employed), still it is being more and more recognized as the logical method of treatment of this disease in probably ninety-five per cent. of cases. Hastening permanent fixation by the application of sound surgical principles, is certainly a decided addition in the treatment of selected cases of Pott's disease.

Albee's technique is as follows: A semi-circular skin incision is made of sufficient length to extend two spinous processes above and two spinous processes below the diseased vertebrae. The skin is retracted and the supraspinous ligament split over the tips of the spinous processes. The spinous processes are then split with a broad osteotome breaking down one side. The length and shape of the graft to be taken is determined by calipers and a flexible probe applied to the gutters. With the patient still in the prone position upon the operating table, the leg from which the graft is to be taken is flexed upon the thigh. An incision is made along the

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anterior surface of the tibia about two inches longer than the graft required. A clean dissection is made down to the periosteum. The pattern as outlined by the probe is then traced on the tibia, and a like graft removed with twin circular saw driven by electric power. The graft is then transferred to the bed previously prepared and firmly sutured with interrupted kangaroo tendon. Both incisions are then closed with catgut in the usual manner.

The post-operative treatment consists of placing the patient upon a firm bed, flat on his back, retained by towel binder to which is pinned four strips of bandage, two above and two below, and fastened to the bed. This position is to be maintained from four to six weeks, after which the patient is allowed to get up without support.

Since April, 1915, we have operated upon fourteen cases of Pott's disease according to the method described, with some modifications which we believe are logical.

before, which is attributed to the secure fixation of the spine.

One patient, a child four years of age, had a tuberculous spine involving the eighth to the twelfth dorsal vertebrae with decided kyphosis, also a tuberculous infection of the left hip joint, both of which were verified by X-ray pictures. The spine had an autogenous splint applied, and the hip was treated by the long plaster spica method. The spine is ankylosed at the point of involvement and the disease is apparently arrested. The entire head of the femur is gone, abscess formation is extensive, and the hip disease is progressing. The disease started in the two places at the same time, one lesion was treated with external splints, and the other with internal splints.

Another patient, a white female thirty-one years of age, was sent to Dr. J. Garland Sherrill from West Virginia to have one kidney removed for extensive tuberculous infection. Upon examination he discovered that she was

OPERATION--BONE TRANSPLANT

PATIENT	SEX	AGE	OCCUPATION	DIAGNOSIS	DUR. of DIS.	DEFORMITY	LOCATION	DATE OF OPERATION	RESULT
1—A. G.	M.	4	None	Pott's Disease	3 mos.	Small Kypos	8 to 12 D.	April 6, '15	Arrested
2—H. S.	F.	6	None	Pott's Disease	2 ½ yrs.	Large Kypos	10D to 2L.	April 14, '15	Arrested
3—H.K.L.	M.	19	Student	Pott's Disease	4 yrs.	Large Kypos	6D to 9D	Jan'y. 4, '15	Arrested
4—J. M.	M.	42	Bookkeeper	Pott's Disease	3 mos.	Large Kypos	9D	Jan'y. 10, '15	Arrested
5—Mrs. G.	F.	31	Housek'per	Pott's Disease	2 yrs.	Slight Kypos	7D to 10D	Aug. 9, '15	Died
6—J. J.	M.	34	Cook	Pott's Disease	4 yrs.	Moderate Kypos	8D to 12D	Oct. 22, '15	Arrested
7—R. T.	M.	58	Laborer	Pott's Disease	12 yrs.	Large Kypos	9D to 2L	Oct. 28, '15	Arrested
8—H. B.	F.	24	Nurse	Pott's Disease	6 mos.	None	2 and 3L	Nov. 16, '15	Arrested
9—E. H.	F.	29	Housek'per	Pott's Disease	1 yr.	Slight Kypos	7C to 2D	Dec. 8, '15	Arrested
10—N. W.	M.	52	None	Pott's Disease	14 yrs.	Large Kypos	6D to 9D	Dec. 9, '15	Arrested
11—M. M.	F.	26	Teacher	Pott's Disease	1 ½ yrs.	Slight Kypos	1L to 3L	Jan'y 5, '16	Arrested
12—E. M.	M.	49	Farmer	Pott's Disease	4 yrs.	Moderate Kypos	8D to 10D	Mar. 2, '16	Arrested
13—R. D.	M.	38	Clerk	Pott's Disease	8 mos.	None	4L	May 6, '16	Arrested
14—Mrs. E.	F.	30	Housek'per	Pott's Disease	3 yrs.	Marked Kypos	6D to 9D	May 14, '16	Arrested

The first modification is the application of a plaster jacket before the operation, which is split down the front and with a window in the back. This is slipped on the patient immediately following the operation and is worn for about four months. The wound can be dressed through the window thus provided. The patient is kept in bed for two months being "propped up" for the last week.

Second modification: Instead of splitting the spinous processes the bone graft is inserted to the side of the spinous processes upon the laminae which have been denuded of periosteum and sufficient removal of bone to have contact on two sides of the splint, and with a small shoulder of spinous process above the graft to insure maintenance (a partial inlay).

The patients operated upon ranged in age from four years to fifty-eight years. There were eight males and six females. Two children and twelve adults. In no case was there any perceptible shock, and little pain followed the operation. In most instances the pain was decidedly less after the operation than

suffering from an active Pott's disease involving the bodies of the eighth, ninth and tenth dorsal vertebrae. As recovery in the shortest possible time was desired, an operation was performed August 9th, 1915. The patient's recovery was uneventful, the wounds healed primarily, and she was not given a single dose of opiate after the operation, which had been necessary before that time. There was no evidence of shock from the operation. The patient went home wearing a plaster corset which was applied just before the operation and reapplied afterward. She continued to improve for four months, then contracted a severe cold, had a hemorrhage from the lung, and died; the acute illness lasted only a few days.

All of the other patients are still living and doing excellently. All of them have gained in weight, varying from five to thirty pounds. Three of the patients are now working every day, and wearing no external support. Our experience, and the observation of patients

treated in this way, has forced us to become most enthusiastic.

CONCLUSIONS.

1. That the most careful clinical study should be made to determine the location and extent of the disease: Whether ankylosis or motion exists.

2. That the operation should be undertaken as soon as the diagnosis is definitely made, as delay probably means progress of the disease.

3. That the only contraindications are active infection in close proximity to the operative field or such existing complications that preclude any operative procedure. The so-called "cold-abscesses" do not come under this heading as they are sterile.

4. That the operation, when performed under the proper surgical conditions, followed by the proper attention, gives a reasonable promise of success.

STIFF JOINTS AND THEIR TREATMENT.*

By FRANK BOYD, Paducah.

The physician and surgeon in his daily work comes in contact with no class of patients that gives him more anxiety and trouble than does those either with partially or completely stiff joints.

The pathology of the disease leading to such a condition, may be either acute or chronic and the method of treatment pursued previously in the case, may be the causative factor for the stiff joint—or if not, the method of treatment may be the causative factor in the joint becoming stiff in such position as to be of least use to the patient. It will not be out of place in treating this subject, I hope, to speak briefly of a few methods of prevention, of this deplorable condition, and to lay stress on the fact, that if we are to have a stiff joint, that we be sure to control the case in such manner that the joint, although stiff, through no fault of treatment, may yet be in such position as to be of most service to the patient. Murphy has well said, "That the doctor could not always prevent a stiff joint, but that he could prevent the joint becoming stiff in the least useful position." This should be the aim in treatment in all acute joint involvements, to be sure that if the joint is stiff, it is in such position as to produce the minimum of disability. As an example, an acute infection of the knee joint due to metastasis, the tendency for the patient is to lie with the knee in a flexed position, thus assuring that at the end of several weeks

the joint is firmly fixed by fibrous or bony ankylosis, necessitating operative measures to get the limb back in a straight position so that it may be useful in walking. The treatment in all such cases should be to place the limb straight in the beginning, and to apply sufficient extension through the medium of splint and weights to not only hold the limb straight, but to draw apart the joint surfaces, this will give the best results in preventing ankylosis, and at the same time if ankylosis occurs, will leave the limb in the most useful position, insuring the ability of the patient to go about without stick or crutches. The same rule applies to fractures about the joints, and fortunately the best position in most cases to dress the fracture, is the position which, if stiff joint results, will leave it in the most useful condition.

The permanent dressing should not be applied until swelling and exudates have been reduced. The joint involved should be examined frequently, and massage given daily in such manner as not to displace the fracture. Daily massage will reduce the swelling and remove in large measure, the exudates, thereby lessening the liability of permanent adhesions and joint stiffness. So much importance is attached to early and scientific massage that some of the larger industrial corporations employ regularly as part of their staff, a professional masseur. Stiff joints are most usually due to metastatic infection, the focal points being at some distance from the joint involved. Much investigation has been carried out, the results seeming to show that the focal infection may be in the tonsils, sinuses of the nose or pus at the roots of the teeth. All such points should be carefully investigated when called upon to treat acute or chronic joint involvement. Bad tonsils should be enucleated, sinus involvement cleared up and the teeth given proper attention. It seems almost a conclusion that so-called inflammatory rheumatism, is caused not by uric acid retention, but most usually by some focal point of infection. The treatment for acute septic joint disease, the most common cause of stiff joints and bony ankylosis of joints will call for the greatest skill on the part of the physician. It is absolutely necessary that every physician should be on his guard when called to such a case that he may not make the mistake of treating the patient for rheumatism: since what he may do in the early days of the disease, will depend on whether the patient is to suffer irreparable injury from stiff joint, or whether he is to recover with the minimum of disability. In every case, one should painstakingly go into the history. If the onset is with a severe chill, high fever, followed by painful joint, whether one or multiple, the conclusion is inevitable that we have to deal

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with an infection. Early aspiration of the joint and injection of formalin-glycerin solution, repeatedly, as advised by Murphy, at the same time applying extension, offers the best treatment for the joint condition. Massage and passive motion after all joint tenderness has subsided, should be carried out; however, this treatment should be undertaken in the gentlest manner, so as to not re-excite inflammation. With the knee joint, the patient should be encouraged to use the limb gently and little by little. Increase the joint motion, until such complete repair has been made as to enable normal movement. If unfortunately, partial ankylosis has occurred in the knee, and fixed at flexion, it will be necessary to straighten the limb absolutely. This may be accomplished with the patient under anesthesia by force, but an important point is that all adhesions of the articular surface must first be broken up, so that the limb will come straight, by the roughened joint surfaces sliding over each other. If all joint surfaces are not broken loose, the femur will be forced forward over the tibia and leave the limb still in an unsatisfactory condition. If the ankylosis is so firm that the knee joint can not be broken up, then it will be necessary to do an arthrotomy, and after the joint is opened up, chisel the joint surfaces apart until the limb will come straight, and place the limb in plaster dressing for such length of time as firm union will result, when the patient may be permitted to gradually resume its use. If the joint is opened up, the individual surgeon will, of course, decide whether he will attempt to interpose flaps as Murphy has advocated, with the expectation of securing a movable joint. Personally, I prefer to straighten the limb and leave it ankylosed in this position, as most of our patients want the assurance of reasonably quick and certain results, and I think that if we undertake the Murphy operation, our patient will have ankylosed joint just the same. I have as yet had no dissatisfied patients for whom I have straightened limbs; since they have been able to get about free from pain and without the use of crutches. I might say also, that I have not found it necessary to resect the joint in any case of less than two years' standing. In old cases of long standing where the tendons are contracted and where straightening the limb without shortening will place too much strain on the popliteal, thereby endangering the circulation of the leg, resection and consequent shortening must be resorted to. It might be advisable to add that no surgical treatment which invades the joint should be undertaken except under the most rigid aseptic technique, and in an operating room where it is the practice to do aseptic work, it is important that a strictly non-contact operation

be carried out. The hands must not touch any instrument, dressing or suture that when used will touch the wound. While such technique requires a little longer time, it is amply justified by the lessened danger of infection.

FRACTURES IN AND NEAR JOINTS; DIAGNOSIS AND TREATMENT.*

By A. D. WILLMOTH, Louisville.

This rather broad subject, assigned to the essayist by your committee, represents a doubtful field in surgery. One strewn with wrecks, full of mistakes, and unavoidable difficulties, and frequently by discontent, and exceedingly fertile for the outgrowth of action at law.

This extremely dangerous field, like the region of the Upper Nile, has been very imperfectly surveyed.

Nearly a century ago a few careful observers, mostly English, together with a few Germans and French, wrote very advisedly on this subject. From this data many copies were made, and few deviations are to be found except in the splendid works of Gurlt, Hamilton and later Stimson.

A decade ago the X-ray came to our aid and likewise our confusion. Its use together with surgical asepsis permitting the invasion of joints produced a vast store of knowledge gained from actual observation which taught us that much we had learned had to be forgotten, and the subject of joint surgery has been and is being thoroughly revised.

We have learned to recognize that each case is a mechanical problem in itself, at least so far as reduction and maintenance are concerned. While we admit that fracture here fall into a constant type roughly speaking, we deny that this is the rule in the careful study of details.

Greater opportunities for study with the X-ray made greater responsibilities, and our opportunities of to-day involve us in the obligation of having our work judged by results. Mistakes must occur, and bad results must be common, but for better or for worse, we study each case and try with the means at hand to get the best results in that particular instance.

The chief indictment to be brought against the X-ray in any field of usage, should be brought in this connection, for—"verily do we see too much."

What both ourselves and the patient regarded as a splendid result, we are now often asked by the lawyer why on earth we left his client in such a terrible fix. He is looking for anatomical perfection, and does not want to

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admit that functional results are all that should be looked for. Make him admit by applying rules of mechanics that no one, himself included, can replace parts in the human machinery, and that we cannot and will not be held responsible for irreparable damage. Ask him to consult any tailor, or dressmaker and see how very few perfect individuals there are. One needs a pad on one hip, the next on both hips and shoulder, yet these people do not complain of any imperfection, then why should we be held up to ridicule and to pay damages for even less imperfection.

Since the results to be had hinge on a diagnosis the many causes of error are well worthy of consideration. The following are in the opinion of the writer the most common causes of error in arriving at correct conclusion in injuries in and near joints and their successful treatment.

- (a). Failure to obtain a proper history.
- (b). Failure to make a proper examination.
- (c). Failure to take Roentgenograms in at least two positions.
- (d). Failure to read correctly the Roentgenogram findings.
- (f). Failure to adjust laboratory findings and clinical symptoms properly.
- (g). Failure by many physicians to realize their limitation—erroneous diagnosis due to ignorance.

To this we may well add inability to construct and apply and cause to stay put, such mechanical means as will hold the bony fragments in a satisfactory position. Let it be understood that a satisfactory position does not mean a perfectly correct anatomical position.

Long bones are merely levers, sustaining the weight of the trunk and conferring the power of locomotion and prehension. They are never straight but curved and generally in two planes to afford greater strength. This being well understood, it naturally follows that a slight irregularity at one or more points so long as it does not infringe on important soft structure could do no harm and does not lessen the mechanical performance of the bone.

The present day demands, placed on the physician makes it obligatory to use X-ray whenever that valuable aid can be had, in the diagnosis and treatment of all fractures or suspected fractures.

The hip joint being perhaps the most striking illustration. If we manipulate to get crepitus we have broken up the impaction and with the ordinary treatment very materially lessened in the old patient the chances of a good result.

The X-ray bids us look and see. But let your plates get well dry, before you venture an opinion. Once the diagnosis is made the

question of treatment takes first rank and in many cases its various difficulties assume such magnitude as to cause the pyramids of Egypt to shrivel into insignificance as compared to the difficulties to be overcome.

The study of individual injuries will serve best to aid us in obtaining a correct knowledge of some of the more important cases.

Shoulder Joint. Due to its anatomical location and its mechanical arrangement, perhaps no joint in the body demands more attention than the above. Prominence together with thin overlying soft structure, full and active motion, causes the bones of this joint to frequently suffer from severe injuries. The land marks to be remembered are:

- (a). The acromion.
- (b). The spur of the clavicle.
- (c). The coracoid process.
- (d). The most prominent part of the spine of the scapular, the spur of the acromion.
- (e). The head of the humerus.

These can all be felt by placing the hands on the shoulder in the manner described in the first plate.

Fractures of the glenoid are not very rare, involving, however, in most instances only the anterior edge of the glenoid. They offer no obstacle to reduction but favor recurrence and are to be diagnosed only by the X-rays.

Fractures of the acromion and coracoid occur rarely and are of little importance causing no trouble in reduction and, like the above, requiring the X-ray for detection.

Fractures of the greater tuberosity are not uncommon, but can be easily palpated and are only with its consequent *weakening* of muscular attachment that have to do with raising the arm and rotating it outwards.

The above remarks apply also to the lesser tuberosity with this difference, that its fractures liberates the biceps tendon from its groove and cause it to pull out of the way.

Fractures of the anatomical neck are rare, and is a fracture of the elderly. A shoulder cap, a swathe around the body and a sling comprise the treatment.

Fractures of the surgical neck are quite the opposite, being rather common, hard to diagnose without X-ray and very difficult to manage, especially when complicated by dislocation of the head. The absence of the head from its normal site together with its presence elsewhere should make a diagnosis.

In consulting a number of authors and reviewing the literature for a number of years past, it was interesting yet regrettable, to notice how little some had to say regarding it, and what was said, was old and carried down from one edition to another.

In the writer's opinion nothing gives the surgeons more concern than does this class of cases. No one will deny that the average prac-

itioner of medicine, or indeed the experienced surgeon, will in most cases be unable to reduce the dislocation. This being true the fracture cannot be put in proper position.

The writer would discourage the old advice of setting the fracture as best you can and hope to get sufficiently strong union to later reduce the head of the bone into the glenoid cavity. You will not succeed one time in fifty. For when the bone has been absent from the cavity for as much as six weeks, adhesions not only form of dense character around the head in its new location, but the cavity becomes filled, making reduction near to impossible.

With our present knowledge of technique, in bone and joint work, I maintain it is not only far more scientific, but much preferable to do an early operation, put the head of the humerus in its cavity, mechanically fix the fracture and place on proper dressings at one sitting and one anesthesia. If fragments cannot be put in position then resection is indicated and should be done at once.

When we speak of early operation, we do not mean in a few hours following injury, for the reason that the tissues at this time are in their lowest state of resistance. Usually ten or twelve days should elapse from the time of the injury to the operation, this allows the lymph spaces to become blocked against infection. All manipulations should be done without hand contact. This method is also applicable to those cases where fracture of the humerus takes place in effort at reduction.

Let me urge upon you, the necessity of examining for arterial pulsations after manipulations in efforts at reduction of these cases. If it later becomes blocked by endarteritis due to trauma, we are not responsible for the gangrene that must follow, and the courts have so held.

Nerve injuries must be dealt with, either by relieving the pressure of, if severed, must be sutured.

Elbow Joint. The landmarks are:

- (a). Olecranon process.
- (b). Two condyles.
- (c). Head of the radius.
- (d). Lower front portion of shaft of the humerus.

Two condyles and the tip of the olecranon should normally be on a line when the arm is extended.

The humerus fractures here, are either condyle, or epicondyle, supracondyloid and "T" fracture into the joint.

Of the forearm we have:

- (a). Fracture of both bones at the level of the neck of the radius.
- (b). Fracture of the ulna alone, either just above or just below the coronoid process,

with or without associated dislocation of the radius.

- (c). Fracture of the coronoid process.
- (d). Fracture of the olecranon.
- (e). Isolated fracture of the radial head or neck.

Fractures in the region of the elbow are of especial interest, for two reasons, if for no more. First, they differ widely in children and adults, next they involve the upper extremity interfering with the patient's feeding himself and leave a deformity readily seen.

Fractures around the elbow joint in children are the result of slight injuries rarely compounded, tend to follow the epiphysal lines, and seldom have as their accompaniment severe injury to surrounding soft parts. The only exception being a complete tearing away of the whole epiphysis from the lower end of the shaft of the humerus.

In the adult, elbow fractures are far more serious. They are usually the result of extreme violence, often compounded, and when not, are split in several pieces, damaging the soft parts making the handling difficult, and the end results uncertain.

Nowhere does the X-ray serve more valuable aid than in this class of injuries. To determine the exact injury, the location and relation of the fragment or fragments and lastly when placed in dressings to see if you have the joint in proper position for the best results to be had.

Treatment in all cases has for its object two purposes. First, to hold fragments in correct apposition, second, to limit motion, thereby lessening the amount of callous thrown out and by so doing enabling the surgeon to get better results.

All fractures of the internal condyle, internal epicondyle, external condyle and "T" fractures should be treated by putting arm in acute flexion. This position maintains the fragments in proper position thus preserving the carrying angle. It also has a strong feature of being easy for both physician and patient, both in application and position it places the injured limb of the patient in. The method is as follows:

Have the assistant grasp the forearm and at the same moment you grasp the condyles with the thumb and finger of one hand while one finger of the other hand is placed in the bend of the elbow, while the assistant makes traction on the forearm, press the fragments in the position by letting him flex the forearm on the arm. The degree of flexion will be determined by the amount of swelling.

Place in the bend of the elbow a piece of gauze covered by dusting powder to prevent skin chafing. When you think arm is flexed to that degree that will hold the fragments in position, place on the adhesive strap by start-

ing on the upper arm at the axillary fold and come around the forearm just above the styloid of the ulna. Now examine for your radial circulation, if it is alright, place a piece of gauze or small towel between the arm, forearm and the patient's chest and apply a Lund swathe to support the injured member. This swathe is made of cotton cloth fifteen inches wide folded three times and long enough to extend twice around the body. When the entire dressing is complete the patient should have no pain. If pain is present, let the forearm down to less acute flexion. Keep dressings on for four weeks and joint at rest for six weeks. This lessens callous and deformity.

One exception to the position of acute flexion is backward displacement of the lower fragment in bi-condylar breaks. Put the arm at right angles and maintain position by internal right angle splint. If fragment tends to inner displacement an internal splint or pad or both will serve the purpose.

Fractures of the head and neck of radius should be diagnosed by X-ray and reduced, then re-examined. If in position place forearm at right angle to arm and hold in position four weeks.

Breaks in either one or both bones within two and one-half inches of elbow joint should be treated by placing forearm at right angles to arm with thumb looking patient directly in the face. After most of these injuries the elbow will at first be pretty stiff and swollen, but massage, faradism and heat together with gentle motion will accomplish good results.

Wrist Joint: For lack of time, one fracture only will be considered, viz.: Colles. The deformity is so marked that X-ray is seldom, if ever, needed. Once it is broken up, it does not tend to recur. Most any form of posterior or antero-posterior splint with a small pad at site of break will hold bones in position. One point must be remembered, you must break up impaction. Personally, I prefer the Walker splint, believing it will give the best results in the largest per cent. of cases in the hands of everybody.

The question of anesthesia is an important one. While the writer reduces most of his cases of Colles' fractures without anesthesia, he is convinced that in the average hands it is better to relax the patient, you will be more likely to thoroughly break up the impaction and free the fragments, consequently better results. Do not promise any patient they will have a perfect looking wrist. You may get deformity in those whom you expect a perfect result.

Hip Joint. These fractures are of more than passing interest, since the larger per cent. occur in elderly people. The writer would discourage the old classification of intra

and extra-capsular fractures, believing very few can be classified, but would suggest simply the term fractures of the neck. The signs of the fracture here may be summed up as follows.

(a). Disability: 1, inability to lift leg from bed; 2, inability to walk.

(b). Any motion of joint is painful and limited.

(c). Eversion of foot, which can be increased but not diminished.

(d). Shortening of from one-fourth to an inch.

(e). Trochanter prominent.

(f). Little local pain, slight if any swelling, absence of usual signs of fracture such as crepitus, swelling, etc. Crepitus only being elicited when crepitus is broken up.

Any injury which prevents the patient from lifting his heel from the bed, together with eversion in old people means fracture. I don't believe there is such a thing as a strain of the hip joint in these old patients. Strains are hardly possible in these patients when we consider the structural changes that usually occur at old age.

The X-ray has proven that nearly all these cases are impacted. Therefore the one thing to remember is not to break it up by manipulating the limb to get crepitus unless you are prepared to use the adhesive plaster and traction method of Allen, which seems to get excellent results and disregards the impaction.

The diagnosis in most cases should be easy. History of a fall (although the fracture precedes the fall) inability to raise the heel from the bed. Eversion of foot, trochanters above Nelaton's line, shortening by Bryant's triangle with shortening of limb should make a clean case. The X-ray, of course, being a sure means (where it is advisable) of knowing exactly the location and extent of the injury.

Treatment. In patients above 65 years of age my advise to you is to treat your patient and very largely disregard the fracture in many, and wholly disregard it in not a few. The mortality in these old people is well above 25 per cent from hypostatic congestion and heart failure in the non-alcoholic, while in the alcoholic it far exceeds this.

These old people suffer and die from confinement in bed and change of routine. Make their days spent in bed especially attractive. Employ a bright and cheerful trained nurse, one that is skilled in ministering to patient's wants. See that agreeable friends visit the patient, that their visits are not prolonged to the point of worry.

Watch their pulse and temperature, be on the lookout for bed-sores, keep the skin clean and bathed well each day with alcohol, and

dusted with sterate of zinc. Allow the patient some freedom in bed, quietude tends to lung congestion. Have him practice deep breathing numbers of times each day. Where treatment is decided upon the following will meet demands:

(a). Traction and counter traction with weight and pulley assisted by elevating the foot of the bed, together with lateral traction in those where it is indicated.

(b). Thomas' Hip Splint with or without traction.

(c). Whitman's method of forcible abduction and fixation with plaster with or without traction.

(d). Pegging the fracture with metal or bone pegs, preferably the latter.

While good results have been had by the old method mentioned first, it is unsatisfactory in many cases.

The patient should be placed in bed on a firm mattress, the leg should be placed in a normal position with a pillow under the knee. The adhesive strips should reach on either side to the perineum and maintained by gauze bandage. Long and heavy sand bags should hold the limb in position and a screw traction device attached and the nurse given a pair of calipers and shown how to keep the limb the same length. This also overcomes the muscular spasm and controls pain.

After two weeks he may assume the semi-sitting position in bed. The extension removed in three weeks, while position is maintained with sand bags. At six weeks the patient may be put in wheel chair and upon crutches, and high sole shoes on well foot at eight weeks and allowed to walk in four months with crutches, and with only a cane after one year.

In this method also in the Thomas' Hip Splint mentioned in the second, nothing has been done to correct the deformity which may be considerable. Therefore I suggest to you the third of Whitman's method. It has served the writer best and is the easiest to carry out and is the only one correcting the mechanical defect. Pegging by metal or autogenous bone pins should be left to those able to master surgical technique. The operation should never be done outside a well regulated operating room. To anyone who has had the pleasure of seeing Sir Arbuthnot Lane do bone work and heard him express his word of warning regarding sepsis it is easy to understand that it requires far more perfect technique in bone surgery than in abdominal.

Knee Joint. Fractures here should be divided into those where the fragments do not separate, and those where the fragments are separated.

In the first variety, good results will be had under any form of treatment, in fact they get well without treatment.

In the next variety, however, the treatment is divided into the non-operative and operative.

The non-operative treatment is safe but imperfect results are to be expected, hence unsatisfactory. No attempt should be made to reduce the fragments until all fluid is removed from joint.

On the other hand the operative offers brilliant results, but is not without its risk. The risk, however, is certainly small in well regulated hospitals and in the hands of surgeons trained in technique. It is certainly to be recommended.

Absorbable sutures should be used in all open fractures, in refractures and in cases of impaired function from fibrous union, with adhesion giving rise to a mechanically imperfect joint.

Suturing of the bone is no longer advisable, but fascia suturing being the ideal. After suturing place the limb on posterior splint to control motion. At end of two weeks begin passive motion and massage. After six weeks a flannel bandage and cane is all that is needed. Six months to a year will be required to get perfect function in the joint.

Pott's Fracture. Perhaps no fracture in the body gives more concern to both the surgeon and patient than does Pott's. Here we have a forcible eversion and abduction of the foot upon the leg, causing a rupture of the internal lateral ligament, fracture of tip of internal malleoli, separation of lower tibia fibular articulation and oblique fracture in lower three inches of fibula.

A traumatic synovitis will occur quickly, causing large swelling on inner side of ankle. The joint will become distended with blood and serum, the foot is everted, the natural curves of the joint are obliterated and the internal malleoli is unduly prominent. The soft and hard joint supports having been removed the foot drops back, caused by pull of calf muscles and weight, causing the "Jay Bird Heel."

In simple cases of Potts', give an anesthesia and put the foot in position and while the assistant holds, put on a plaster dressing and before it hardens grasp foot and firmly over-correct the deformity and hold until plaster sets. If splint is used, place on internal and external splints from groin to below foot and place a thick firm pad above internal malleoli and below external malleoli, to hold foot in over-corrected position.

In compound fractures where lacerations are so great the foot is useless amputation should be done, so also in the old to get a quicker result thereby shortening time in bed, etc., also in sepsis amputate before general infection occurs. Extreme conservatism should be used in these cases, many seemingly useless

ankles will give a perfect or well night perfect result.

CONCLUSIONS.

No recent fracture should be operated on that can be successfully treated by other means.

No recent fracture should be operated on except under the most favorable surroundings, and by an experienced surgeon who is a master of aseptic technique.

The resisting powers of the patient should be taken into careful consideration.

The patient's position and duties in life deserve attention.

The success of operative intervention depends much on the accessibility of the fracture—the danger varying directly with the amount of manipulations required.

It should be recognized that faulty alignment and overlapping of fragments, or even the presence of visible deformity, do not always mean disturbance of function.

In estimating the value of an operation the after-treatment deserve consideration, will it be rendered less trying to the patient or give a better result in a shorter space of time.

The indications for operation vary greatly with the particular bone which is broken, the character of the break, and its situation in the bone.

Admitting the desirability of operating in certain carefully selected cases, it must not be forgotten that there are two important drawbacks—delayed union and sepsis.

DISCUSSION.

Frank Boyd, Paducah: I desire to say a few words on Dr. Owen's paper on the Albee method of correcting Pott's disease, and it is more particularly with the idea of reminding the profession that a Kentucky doctor, Russell A. Hibbs, of New York, but formerly of Birdsville, Livingston county, Kentucky, is the author of this procedure in correcting and curing cases of Pott's disease. I must say that after witnessing Albee doing his work, and after witnessing Dr. Hibbs do his work, and after seeing the cases of both physicians, I prefer the Hibbs operation over the Albee operation, for the reason that in the Albee operation the spinous processes are split, and a piece from the tibia is used as an insert to bridge the diseased vertebra, often this insert fractures and does not always serve as intended. Hibbs uses the bone already in the situation in which nature has placed it, and his cases are remarkable for their rapid recovery. He simply uncovers the spinous processes through a skin incision, two above and two below and over the diseased area, and with a chisel nicks the posterior portion of each spinous process and breaks down the process in situ and leaves them in contact with each other. You get your bony growth just exactly the same, only I believe it is a better method than

when you do it by the Albee method. Four years ago, after witnessing Dr. Hibbs doing his work, and after coming home I had a little patient on whom I operated by the Hibbs method, the first operation of this kind that was done perhaps in Kentucky. The little child had been an invalid. The result in the case was satisfactory. That little fellow is now able to run around the street, and while he has a hunched back, he goes to school, rides a bicycle, and he thinks he is all right.

W. B. Owen, Louisville: I wish to speak relative to Dr. Willmoth's very interesting discourse upon fractures in or near joints. This is the most difficult type of fracture we are forced to handle. In the first place, proper reduction, and absolute maintenance of the proper reduction is more nearly necessary at or near the joint than any other part of the body. We can get good function in the long bones, although reduction may not have been quite so perfectly accomplished.

Every man has a different method of accomplishing practically the same thing, and I think we waste too much time in quibbling over minor details. After all, it is the man behind the method rather than the method behind the man.

A. D. Willmoth, (Closin): Just a word or two in regard to the condition about the joints. I wish merely again to call attention to the splendid work done along this line by the late Dr. Murphy in urging you to keep the joints in absolute quiet. It stands to reason that the more you move a joint about, the more callus is thrown out, and the more liable you are to get a fixed joint. If you keep it quiet, limit the amount of callus, the less apt are you to get a tremendous callus poured out and fix the joint as a result.

I want to say again that the conditions about a joint are the most dangerous class of fractures we have to treat, and if it is possible it should be X-rayed, should be put in position that you desire to place it, whatever method you may adopt, and X-ray it again to see that it is in that position. And last, to again call your attention to the fact that it is not always anatomical perfection that you hope to get or you can get. If you get the bone even, if it is not exactly in line by the X-ray, the patient may nevertheless have a good result. If you see a peculiarity that does not interfere with the bone at all, that does not interfere with function or with the patient, the patient would not know the difference if an X-ray plate was not made. Many of these cases are on trial in courts in this and other states for deformities because surgeons have left their patients with this slight imperfection in the line of the bone, which the legal fraternity will take advantage of and pull you into a court of justice. The bone performs all the functions of a lever and is just as good as far as its usefulness to the patient is concerned, and the moment the suit is decided he will be cured.

W. P. Drake, Bowling Green: If I understood

Dr. Willmoth correctly, he spoke of rest in fractures, and I would like to ask him if he confines himself to joints. If we have a fracture that does not heal very well, some authorities recommend that we use that joint a little to stimulate callus.

A. D. Willmoth: I had reference to cases of fractures in joints. I showed a schematic fracture of the internal condyle where it split off and ran down the injured joint. If you allow such a patient to move the arm, for instance, with such a fracture you have a tremendous amount of callus poured out. In the cases that are slow in pouring out callus, where there is a lack of activity on the part of nature, moving the set bone will stimulate the callus. In a joint fracture we must be careful about the pouring out of callus and fixing the joint. Where nature is slow in pouring out callus, if you move the joint it causes irritation of the ends of the bone. Many of these cases are syphilitic and the administration of antisyphilitic remedies will stimulate healing.

ACUTE URINARY RETENTION FROM BALL-VALVE ACTION OF ORGAN- IZED BLOOD CLOT.*

By CLAUDE G. HOFFMAN, Louisville.

Acute urinary retention is a rather common symptom of various disorders of the male genital tract. The following case, however, seems to present several features of unusual interest. In no other instance in my experience has acute retention been produced by a similar cause, nor have I observed any analogous reports in the literature.

Mr. L. V., white, aged forty-two years; occupation lumber salesman. History of Neisserian urethritis five years ago, for which he was treated in the usual manner with a satisfactory recovery; venereal history otherwise negative.

Present trouble dates from August 3rd, 1916. Following an attack of ptomaine poisoning he first noted upon slight straining at the close of urination the discharge of a small quantity of bright red blood. He consulted a physician two days later, and was given fluid extract of ergot internally, which seemed to cause temporary subsidence of the symptoms.

On August 6th the patient stated that he had an intense desire to urinate, but the act could not be accomplished. During the height of the tenesmus he forcibly expelled two or three drams of blood. When I saw him the same day at seven o'clock P. M., he had acute retention and was suffering intensely because of bladder distension. Rectal examination showed a slightly enlarged prostate which was especially sensitive over the area of the right lobe.

After trying several methods to induce urination without success, a catheter was finally introduced and eighteen ounces of foul smelling bloody urine withdrawn. The bladder was irrigated with saturated solution of boric acid until the fluid returned clear, about eight ounces of the solution being left in the bladder. Microscopic examination of a specimen of the urine revealed an abundance of blood, pus, and epithelial cells from the bladder. When attempting to void the boric acid solution left in the bladder, the patient again experienced intense pain and tenesmus. Straining caused expulsion of a small quantity of bloody fluid from the urethra with such force as to be deposited four feet away.

I ordered hot sitz baths, and administered internally urotropin, potassium citrate, and tincture of belladonna, instructing the patient to remain quiet. Notwithstanding the sitz baths urination was impossible during the night.

I saw the patient again at eight o'clock A. M., August 7th, and withdrew twenty ounces of bloody urine with catheter. The bladder was again irrigated with camphorated alum until the solution returned clear. From the character of the symptoms and the bright color of the expelled blood, I was almost positive the pathology was located in the posterior urethra.

At two o'clock P. M., August 7th, the patient was prepared for cystoscopy. After again irrigating the bladder in the usual way, the cystoscope was introduced. When the obturator was withdrawn and I began to distend the bladder preparatory to examination, the patient complained of intense pain and began straining. I released the opening in the sheath of the cystoscope, and immediately about a handful of blood clots were extruded with tremendous force. Examination showed that these clots were distinctly organized, being dark, tough and "leathery" in character. After continuous irrigation until the fluid returned clear, I proceeded with my cystoscopic examination. The bladder was found perfectly normal in appearance with the exception of a slight trigonitis and few injected blood vessels along the right sphincteric margin.

Bringing the cystoscope forward a small abscess was detected in the prostatic urethra. This had ruptured and was still discharging pus and blood. After thoroughly irrigating the posterior urethra the cystoscope was withdrawn, and the patient was then able to entirely empty the bladder of the remaining solution. Daily intra-vesical irrigations with 1-10,000 silver nitrate solution for ten days, two applications of a 2 per cent. solution of silver nitrate to affected part, caused disap-

*Read before the Jefferson County Medical Society.

pearance of symptoms, and patient being able to urinate in the normal manner.

The acute retention in this case was undoubtedly caused by the organized blood clot acting as a ball-valve, just as a median bar of the prostate may sometimes cause obstruction. After the clot escaped from the bladder retention was relieved. The blood evidently originated in the posterior urethra from rupture of an intra-capsular prostatic abscess, and flowed backward into the bladder where it coagulated and thus acting as a ball-valve caused the retention. The urine continued to contain pus and blood for five or six days following cystoscopic examination, becoming negative about the tenth day.

I saw the patient daily from August 6th to the 17th, when the urine was perfectly clear macroscopically, but a few pus cells were still present upon microscopic examination. On September 13th the urine was still clear macroscopically. No microscopic examinations were made after August 17th. According to latest reports the patient has remained well, and has had no further urinary difficulty.

DISCUSSION.

J. W. Price: Conditions such as Dr. Hoffman has described must be exceedingly rare. Only one case of the kind has come under my personal observation, and that was many years ago when I was an interne in the Presbyterian Hospital of Philadelphia. The patient was about seventy years of age with a slightly enlarged prostate gland. Cystoscopic examination revealed some enlarged veins in the prostatic region, but he was admitted to the hospital primarily because of acute urinary retention.

Immediately upon introduction of the catheter blood began to escape from the bladder, and several fairly good sized organized clots were discharged during vesical irritation. The bladder was drained and after remaining in the hospital a few days the patient was able to micturate normally. No further treatment being required he was dismissed.

About three weeks later he was readmitted with an exactly similar condition, which was relieved in the same way. The urinary obstruction was due to the presence of organized blood clots in the bladder. The hemorrhage probably came from rupture of enlarged veins in the posterior urethra.

M. Casper: From a mechanical standpoint the most perfect ball-valve action producing urinary retention that I have ever seen was in a patient referred to Dr. Bronner some time ago. The man had a carcinoma the size of a large marble attached to the posterior vesical wall by a slender filament-like pedicle of sufficient length to allow the neoplasm to reach the vesico-urethral orifice and completely obstruct the urinary outflow. My

first idea was that the obstruction was due to an enlarged prostate, and under this assumption a suprapubic operation was performed. When my finger entered the bladder the cause of the obstruction was easily determined. The carcinoma also involved a considerable portion of the posterior vesical surface.

C. G. Hoffman, (Closing): In the case reported the patient would undoubtedly have been subjected to a surgical operation for relief of the urinary obstruction had not the diagnosis been promptly perfected by the aid of cystoscopy. The blood clots were too large to be extruded through the catheter. The bladder was irrigated several times by means of a No. 24 catheter before cystoscopy was practiced, and no blood clots were removed.

There were three pathological possibilities in this case: (1) a vesical tumor; (2) prostatic abnormality, and (3) vesical or prostatic calculus. The cause of the retention was quickly demonstrated by the cystoscope. The caliber of the cystoscope, being larger than that of the catheter, permitted the clots to be forcibly expelled when the patient strained in his efforts to urinate.

The symptoms disappeared within ten days, and the patient has had no urinary trouble since. I am confident the ball-valve action of the organized blood clot caused the obstruction to the urinary outflow, and in that respect the case seems unique.

Radio-Activity Induced by Non-Radio-Active Elements.—Levy-Dorn states that the spark between the electrodes of an induction coil—not in a vacuum—has considerable penetrating power. A photographic plate in three layers of black paper was effected by the rays from this spark, and the ordinary fluorescent screens were lighted up. These rays issue from the cathode. The rays rendered the objects receiving them radioactive for a time, up to two hours in his experiments. The photographic power was equivalent to that of 1-7 mg. radium when the spark was 10cm. long, with a current of 3 milliamperes, a lead cathode, and twenty minutes' exposure.

Sources of Error in the Phenolsulphonephthalein Test of Renal Function.—Roth states that conditions in women with genital disease or during pregnancy interfere with the test. He also says that if the urine is not all drawn, there may be enough residual urine to interfere with the findings. In measuring the urine, the residual urine must be considered. He found that different makes differed widely in the reactions observed. The lumbar muscles are better suited for the injection, he thinks, than the gluteal; with the latter erroneous findings are liable to result from defective absorption and also from a difference in the depth to which the needle is introduced.

TONSILS.*

By RANDOLPH DADE, Hopkinsville.

It will not be my endeavor to enter at all exhaustively into the discussion of a subject, that has been, and is being so much talked and written about, therefore desire simply and unassumingly to mention the more salient points that bear upon my subject, "Tonsillitis." I do not propose to discuss the symptoms, pathology, nor treatment, simply and unadvisedly leave that to the discretion of an intelligent audience. Would like for you to consider a few points regarding the tonsils, so to begin this we may ask ourselves these questions: What good do the tonsils do. Then on the other hand, what harm can the tonsils cause?

In answer to the former inquiry, must state that that is a mooted question, but we do know for a certainty that these organs have the power of creating lymphocytes, to a minor degree, however, and that this is insignificant, past the age of two or three years of life, has been proven, for the removal of the tonsils past two or three years of life has not been followed by deleterious results. As to the tonsils producing an internal secretion much has been written, but little information of any definite caliber, has shown itself as the result of careful researches along that line, hence we are compelled to answer our questions, with an interrogation point. Undoubtedly the tonsils stand guard at the portals of our alimentary and respiratory tract, yet when these organs became burdened with bacteria, do they still prove a benefit or a burden? Microorganisms, heat, moisture, and darkness, a better incubator for the growth of bacteria has never been devised by science. We know that before the tonsil becomes an infected organ that it must be of inestimable service, yet the question is compelled to confront us. How long, with its constant battle with bacteria, will it remain a help, instead of a menace?

The tonsils like the body in general, can control a certain amount of toxins, but when overpowered then disease is the end result.

But gentlemen, don't let's forget that every systemic or throat trouble is not a diseased tonsil, sometimes marked pharyngeal manifestations are the result of some functional or systemic disorder or some local derangement that do not bear any relationship to the tonsils at all, except probably sympathetically, as in rheumatic diathesis, or some functional stomach disturbance, probably a hyper or hypochlorhydria, acrid gaseous eructations can markedly irritate so delicate a mucous membrane, and so on.

The point that I wish to emphasize is this, look for all the obscure things that could

cause tonsillar manifestations, then when we have exhausted our skill in that channel, and still have presenting symptoms of focal infection, we necessarily must view the tonsils with suspicion, some nasal, or sinus disorder, or a pyorrhoea may act as an exciting cause, producing tonsillar symptoms, when described disorders are removed then we find a cessation of pharyngeal congestion and throat symptoms, as well as systemic.

Again, don't let's forget the habitual drinker coming complaining of some throat trouble. Upon examination you find a fiery red throat. This man does not want a tonsillectomy, doesn't need it. What he does need is to leave off drinking, as treatment for what might have been termed a pair of diseased tonsils, this patient may also have urinary symptoms that might come under the tonsillar category, which is alcohol poisoning, and not tonsils.

In like manner, the man who smokes and inhales the fumes. Again public speakers, auctioneers, etc.

A noted specialist has made the remark that 50 per cent of the tonsils that he has removed should have been left in.

Although unable to decipher the real meaning of a tonsil, we can not deny the wisdom of God in building a structure so wonderful as man, that anything, however beyond our understanding, could have been placed in our bodies without some real and definite purpose.

Now for the latter question. What harm can and do the tonsils do? Would like to quote Dr. Hillard Wood, Nashville, Tenn., who when asked by a student, what harm can the tonsils do, he replied, "Harm that can never be repented of.

The tonsil is a typical hypocrite, probably located snugly in the tonsillar fossa, presenting no swelling, no redness, patient may never have had an attack of tonsillitis, and yet the same, apparently healthy, is full of poisons. Therefore it is conclusive that in every case we can not judge the pathology in a tonsil by its appearance.

The peculiar construction of our bodies makes each organ dependent upon the other, and such an intimate relationship exists that one can not suffer and others, or the whole body not suffer with it. It's true that this intimate relationship exists between the tonsils and the body to a degree, hence many times systemic manifestations are nature's warnings of focal infection.

Dieulafoy has shown that 96 guinea pigs inoculated with pieces of tonsils and adenoids that out of this number 15 developed tuberculosis. We must not lose sight of the fact, however, that the surface mucous membrane may have contained the tuberculosis

*Read before the Christian County Medical Society.

bacilli, and that these glands were acting as protective elements.

Rosenow has shown by experimentation that certain bacteria have a selective action upon certain organs, the streptococci for instance, seem to choose the walls of the stomach for their revels, as we so frequently find streptococci in the tonsils, and as shown by Rosenow, why shouldn't we at least think of the tonsils as associated with gastric ulcer, by means of feeding streptococci into the system? As to certain kidney disorders, the cardiac diseases, rheumatism and gastric disturbances, these are merely mentioned for thought, in conjunction might be well not to overlook otitis media with its many associated troubles, mastoiditis, thrombosis, meningitis abscess and etc. So on and on, we can argue pro and con, but the intention of my paper I hope will make us think, that there are and are not diseased tonsils, that tonsils have been, are being, and will be left in that should be removed. Hence we must think and act according to our better judgment, lest we err in removing or failing to remove.

Case of Spirillum Infection.—This case was, in the beginning, considered as having its origin below the diaphragm as a process which had extended upward. It was also presumed to be due to some ordinary pyogenic organism. The assumption that the original infection was below the diaphragm was probably correct, but repeatedly sterile cultures and the absence of any organisms, save the spirilla, from the smears make the supposition of a pure spirillum infection strong. Unfortunately, the condition of the patient was such that it seemed inadvisable to take a blood-culture.

Pharmacology of Body Temperature.—Barbour's first group of experiments show that the health-regulating centers are directly susceptible to cold and heat, as well as to specific neuropharmacologic action. Analogous to the high temperatures which can be produced by the "heat puncture" experiment they have demonstrated a stimulation of the temperature centers with cold, caffeine, and betatetrahydronaphthylamin. Depression, giving an antipyretic effect, has been obtained with chloral, antipyrin, quinin and epinephrin. The second series of investigations showed that animals deprived of one cerebrum and corpus striatum (often), or of both cerebra corpora striata and optic thalamia (always), run a subnormal temperature for the days which they survive the operation. In such animals, when given average doses of antipyrin, the phenomena of increased heat dissipation do not occur, and those of heat production are exaggerated. The total effect is a paradoxical rise in body temperature.

NEWS ITEMS AND COMMENTS

Dr. E. L. Gowdy has been seriously ill from pneumonia at his home in Taylor County, but is improving.

Dr. J. B. Buchanan of Taylor County, has been unable to attend to his practice for some weeks, but is now improving daily.

Dr. F. F. Buckner will return to Campbellsville to resume practice.

Dr. J. L. Atkinson, Taylor County, is spending some time in Florida, recuperating.

Dr. C. M. Driver, while returning from Winchester to his home near Gordonton, lost control of his automobile and it ran over an embankment and bruised up both himself and daughter, Miss Mary Elizabeth. The machine was demolished.

Dr. S. E. Hampton, a well known retired physician, of Carroll county, died at his home in Hunter's Bottom after a lingering illness, aged about 80 years.

Dr. Hampton was a Civil War veteran, a prominent physician, and a man of advanced ideas, and he contributed many items to the press. He is survived by his wife and six children.

The second examination to be given by the National Board of Medical Examiners will be held in Washington, D. C., June 13, 1917. The examination will last about one week.

The following states will recognize the certificate of the National Board: Colorado, Delaware, Idaho, Iowa, Kentucky, Maryland, North Carolina, New Hampshire, North Dakota and Pennsylvania. Favorable legislation is now pending in twelve of the remaining states.

A successful applicant may enter the Reserve Corps of either the Army or Navy without further professional examination, if their examination papers are satisfactory to a Board of Examiners of these Services.

The certificate of the National Board will be accepted as qualification for admittance into the Graduate School of the University of Minnesota, including the Mayo Foundation.

Application blanks and further information may be obtained from the Secretary, Dr. J. S. Rodman, 2106 Walnut Street, Philadelphia.

Kentucky physicians are urged to take advantage of this opportunity.

Protein Metabolism of Normal Pregnancy.—In general, the authors believe that peculiarities in the composition of the urine of normal pregnancy and regards its nitrogenous constituents may be accounted for on purely physiologic grounds.

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ANESTHETICS

W. H. LONO*Louisville*NEXT MEETING STATE ASSOCIATION,
ASHLAND, 1917

COUNTY SOCIETY REPORTS

Beathitt—The Breathitt County Medical Society at a called meeting January 2nd, met at the office of H. L. Biggs with seven members present, Luther and Wilgus Bach, H. L. Biggs, C. H. Hurst, W. P. Hogg, Earl Moorman and O. H. Swango. W. P. Hogg was unanimously elected President, Earl Moorman, Vice President, and O. H. Swango, Secretary. It seems that our society has taken on new life, many interesting subjects were discussed.

H. L. Biggs read an interesting paper on "Fees, Compensation and Rewards of a Country Doctor." It was regretted very much that Drs. Hogg and Dr. Hobbs were unable to attend this meeting.

A committee composed of Earl Moorman, C. H. Hurst and Wilgus Bach, was appointed to arrange for the reception of the Kentucky Valley Medical Society which meets with us in June.

There being no further business, on motion the society adjourned to meet the first Thursday in February with Dr. C. H. Hurst.

O. H. SWANGO, Secretary.

Barren—The Barren County Medical Society met in Glasgow, January 17, 1917. Members present: Botts, Howard, Miller, Porter, Smock, Turner and Taylor.

T. F. Miller in the chair.

The reading of minutes deferred to next meeting.

W. T. Botts led in a general discussion of "Pneumonia," its nature and treatment.

C. C. Howard, Porter, Miller and others discussed at some length this dreaded disease, and many valuable points were brought out.

W. T. Botts believes that creasotal properly given is almost a specific.

R. H. Porter places a high estimate on digitalis, when there is weak heart action, and general depression.

Adjourned to meet February 21, 1917.

S. J. SMOCK, Secretary.

Barren—The Barren County Medical Society met in Glasgow, February 21, 1917, with the following members in attendance: Smock, Carroll, Botts, Turner, Taylor and Acton.

The president being absent, Dr. Smock was called to the chair.

The minutes of the last meeting were read and approved.

There being no papers the hour was spent reporting and discussing clinical cases. Interesting cases were reported by Drs. Carroll, Turner, Smock, and Botts.

There being no further business the society adjourned to meet March 21, 1917.

J. M. TAYLOR, Secretary.

Christian—The Christian County Medical Society met in regular session Tuesday, March 20, 1917, at the Carnegie Library.

The following physicians were present: Drs. Barnes, Dade, Thomas, Sargent, Barker, McLearn, Riley, Woodard, Rozzell, Gaither, Sandbach, Wright, Reynolds, Rudd, Harned, Southall.

J. G. Gaither read a very interesting paper on "Primary Repair of Perineal Lacerations."

J. J. Rozzell read an interesting paper entitled "Feeble Minded Survey As a State Problem." These were splendid papers.

J. W. HARNED, Secretary.

Daviess—The Daviess County Medical Society met at the City Hall in Owensboro, on March 20, 1917. Twenty-six members were present. The President, J. M. Clayton, presided.

Ed Barr reported a case of tetanus following a wound on the scalp. He gave two injections of antitetanic serum of 5000 units each. Had a good recovery. Did not know whether it was due to treatment or in spite of it. A general discussion followed. Most of the members had lost cases and were perfectly willing to try the serum, or anything else that promised any relief.

Robert Lockhart read an excellent paper on "Anaphylaxis." He covered the field pretty thoroughly.

The paper was discussed by Drs. Stirman, Griffith, McKenney and Glahn.

The other essayist, S. Lambert, was engaged is a labor case and could not be with us.

J. J. RODMAN, Secretary.

Franklin—The Franklin County Medical Society met in regular session on Tuesday, March 13th, 1917, at 7:30 P. M., in the office of Drs. Williams & Mastin. Present, Drs. Helm, Keller, Coleman, Mastin, Patterson, Heilman, Minish, Garrett, Williams, Montfort, Fish and visitor, Mrs. Howard Farmer. In the absence of both the president and vice-president the meeting was called to order by Dr. Keller. Minutes of the previous meeting read and approved and after disposing of routine business, a social session with Dr. Flora W. Mastin as hostess, who served a very delightful two course lunch, which was disposed of with great avidity and satisfaction.

After lunch the Round Table was called to order for the discussion of the "Thyroid," which was entered into by all present and a very instructive hour and a half was spent in discussing the subject by each member present. The Round Table is proving very instructive and profitable and we recommend its adoption by other societies.

Adjourned.

U. V. WILLIAMS, Secretary.

Harlan—The Harlan County Medical Society met at the Harlan Hospital February 24th, at 8:30 p. m. After the reading of the minutes and

roll call, which only six doctors answered present out of an enrollment of twelve. The reason was a basket ball game and quite a bit of sickness. The physicians present were Drs. G. P. Bailey, W. P. Cawood, W. W. Sneed, E. M. Howard, A. Jenkins, C. V. Stark.

The first half hour was devoted to clinical cases.

W. P. Cawood reported an epidemic of measles.

C. V. Stark described a case of acute indigestion complicated with worms.

A. Jenkins reported a case of hookworms and a foot and arm presentation and two cases of laparotomy with excision of tubes and appendix.

We had a general discussion of the use of hot and cold drinks in measles and found the doctors used both in the treatment of measles.

W. P. Cawood read a very excellent paper on "Anesthesia," which was heartily discussed by all present.

At 9:30 we repaired to the dining room to a very elaborate supper consisting of cheese and ham sandwiches, olives, apples, grapes, oranges, hot cocoa and coffee, and lettuce; on account of the scarcity of milk we did not have the mush and milk.

After the repast the president appointed Drs. Martin, Jenkins and E. M. Howard to draft a schedule of fees to be adopted at the March meeting, also W. W. Sneed prepares a paper on "Medical Ethics." The society will also adopt a constitution and by-laws.

Adjourned at 11 P. M.

We only have three doctors in the county now who are not members of the society and of course they will be left off of the regular program and the mutual help of the society in their damage cases.

CHAS. V. STARK, Secretary.

Knox—The Knox County Medical Society at its annual meeting elected the following officers: John G. Tye, Barbourville, President; Wm. Burnside, Barbourville, Vice President; Chas. L. Heath, Lindsay, Secretary and Treasurer; Chas. L. Heath, Delegate to State Association.

C. L. HEATH, Secretary.

McCracken—The McCracken County Medical Society met in regular session at the Board of Trade rooms. The president, Dr. J. B. Acree, in the chair, and the following doctors present: Drs. Blythe, Rivers, C. E. Kidd, Boyd, Taylor, Powell, Kirkpatrick, Pulliam, Parsons, Lackey, Sights, Freeland, Jackson, Harkey, Stewart and Caldwell.

The secretary, Dr. Parsons, was called out before the opening of the meeting and at his request Dr. Delia Caldwell acted as secretary pro tem. The reading of the minutes was dispensed with. The application of Dr. H. P. Sights, a former member who has returned to Paducah to reside, and reports himself in good standing with

the Christian County Medical Society, was unanimously approved by the society, and upon the vote being taken, he was elected a member without his application lying over two weeks for the approval of the censors. The president reported having received information from the A. M. A., in regard to lectures with slides on medical topics of interest to the public and the profession being sent out by this association. The society voted that this communication be received and filed.

Vernon Blythe who was appointed a committee of one to confer with the board of trustees of the Carnegie Library in regard to the placing in the library of several high class medical periodicals, reported that the Board were favorably impressed with his request, and expressed a willingness to grant it. The medical society by a vote instructed Dr. Blythe to express to the Library Board our appreciation of this courtesy.

Miss Amy F. Lowe, Public Health Nurse, was introduced to the society by Dr. Caldwell, and made an interesting talk explaining her work, and offering her services to assist and co-operate with the members of the medical profession in Paducah.

The subject for a scientific discussion was "The Kidney."

Delia Caldwell gave a thorough but brief talk on the "Anatomy of the Kidney," speaking particularly of the new nomenclature, and the loss to the older members of the profession of our old friends, "Loops of Henle," "the Malpighian Bodies," etc.

E. W. Jackson gave a most excellent paper, "A Few Practical Points on the Diagnosis of Renal Lesions." So appreciative was the society of this fine exposition of the subject that it was voted by acclamation to send this paper to the State Journal for publication.

These papers were quite freely discussed by the following: Blythe, Harkey, Stewart, Rivers, Kirkpatrick, Taylor, Boyd and Powell.

The Committee on Program announced the following for the next meeting:

V. L. Powell, "Anatomy of the Liver."

P. H. Stewart, "Surgical Consideration of the Liver."

All members present expressed great interest in the work of the society, and pledged their hearty support in carrying it out.

No further business the meeting adjourned.

W. H. PARSONS, Secretary.

Reaction of Salomon and Saxl as Diagnostic Test for Carcinoma.—No differences were found by Greenwald to exist between the urines of patients with carcinoma and other diseases and normal individuals, in the amount of barium sulphate, either absolute or relative to the total sulphur, precipitated by the procedure of Salomon and Saxl. It is therefore concluded that the test is of no value in the diagnosis of carcinoma.

BOOK REVIEWS

Cataract—Senile, Traumatic, Congenital—by W. A. Fisher, M. D., Prof. of Ophthalmology, Chicago Eye, Ear, Nose and Throat College. Published by the College.

Everyone practicing ophthalmology in America is familiar with the work done by Prof. Fisher in the development of the intra-capsular extraction of the cataractous lens and recognizes in him one of the most skilled cataract operators. Hence it is with regret that we see a volume appearing under his name which is not commensurate with his surgical ability. While the little volume contains much information of value especially to those interested in extraction of cataract in capsule, it is disappointing and gives the impression of being made up of a number of reprints bound as a whole. There is considerable repetition in the text and cuts some of which appear as often as three times and several of the chapters (papers) include the discussion of other ophthalmologists.

The first twenty-four pages of Fisher's treatise represent verbatim quotations from other textbooks dealing with the capsular and the intra-capsular operations for senile cataract. He then gives a very lucid description of the Smith-Indian operation of extraction in capsule as modified by him, including the accidents possible during the operation and the complications which might follow and the means to overcome them. The chapter is supplemented with case reports of ninety-four consecutive operations.

Short chapters are devoted to traumatic and congenital cataract with case reports.

Fisher advocates the extraction in capsule and believes that it should be the operation of choice. This conclusion is based especially upon economic reasons as the possibility of removing lenses before they are fully opaque (mature) thereby doing away with the depressing period between the time that the patient is forced to give up his daily duties and the operation is of undoubted advantage to the patient.

Fisher believes that the danger of the loss of vitreous which has been the chief argument against the extraction in capsule can largely be overcome by acquiring the technique upon the eyes of four to five weeks old kittens.

We would commend the book to those desiring to familiarize themselves with the Fisher operation.

Price of volume \$1.50, post prepaid.

Adolph O. Pfingst.

Cultivation of Virus of Vaccinia.—Briefly, from their work thus far on the application of Harrison's method to the cultivation of tissue in vitro to corneal tissue plus the virus of vaccinia, the authors are able to state that there is a multiplication of the virus of vaccinia, although no specific vaccine bodies are found in the preparations.

KENTUCKY MEDICAL JOURNAL

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EDITORIAL.

AN APPEAL FOR SERVICE!

Kentuckians, do your duty!

These words have never been uttered in vain. This appeal has never been made that red-blooded, efficient men have not responded to the call. From the time of the Revolution through the War of 1812 and the Indian Wars, there has never been a time when more Kentuckians in proportion to their numbers have not been on our country's battle field than from any other state. The German War will find no exception to this rule. We have been sleeping some, thoroughly contented with the happy lot which has been ours in the service of the people of our different communities, but the time is now here for action.

This war must be the people's War. It is not going to be over soon. The United States is going to be the victor, but this is true because it is going to have the help of every man and woman in the Union, down to the last drop of their blood, if it is necessary. Whatever the sacrifice, whatever the cost, it is our duty to respond now, and first. Every physician in Kentucky, who is under fifty-five years of age and who is competent professionally and fit physically should enroll in the Medical Reserve Corps of the Army or Navy now.

By an especial arrangement, your application can be made and the examination completed at the office of the State Medical Association in Bowling Green, any day you arrange to be there. Expenses to the examination will have to be borne by the applicant. Commissions for those without military experience will be as Lieutenants and the be-

ginning salary will be \$2,000 per year. Men under thirty-five will be called for duty first and older physicians with families will only be called if absolutely needed, but, in order to do the right thing, and we Kentuckians can not be satisfied with ourselves unless it is done right, it is essential that every man under fifty-five be enrolled... For any anxiety about the care of the people at home, the Medical Department of the Army, under the wise administration of General Gorgas, will see that no community is stripped of its physicians.

This is no time for hysteria nor excitement. It is a time for every man to realize his duty to his country and to act.

HOW TO APPLY FOR A COMMISSION.

Physicians under fifty-five years old who desire to apply for a commission in the medical reserve corps of the army should address a letter as follows:

Surgeon General U. S. Army,
Washington, D. C.

Sir: I hereby make application to be examined for appointment in the Medical Reserve Corps of the U. S. Army and enclose two testimonials as to my character and habits.

I certify that to the best of my knowledge and belief I am laboring under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required of me if commissioned.

I furthermore state my willingness to proceed to Bowling Green or such other point for examination as may be designated by the Surgeon General, with the understanding that the journey entailed thereby must be made at my own expense.

Mail or bring this letter, with the personal history application in this issue of the JOURNAL, and two letters of recommendation as

to habits, moral character and professional standing with you, to Bowling Green, and you will be examined and your papers completed there. There are no fees or charges of any kind, and Dr. McCormack does not receive any compensation for doing this work, but is doing it as a part of the regular routine work of the Kentucky State Medical Association and the State Board of Health in looking after the interest of the medical profession and people of Kentucky.

For men under thirty-two years of age who have had at least a year's hospital experience, this issue of the JOURNAL is also carrying a blank application for commission in the medical corps of the army. These positions are very attractive, offering, as they do, a career and income through life that will satisfy the most ambitious. Those who desire to apply for the medical corps of the regular army must be under thirty-two years of age and their applications should be mailed directly to the Surgeon General at Washington.

NATIONAL MEDICAL PREPAREDNESS.

The avenues through which the most effective service can be rendered by members of the medical profession have taken definite and concrete form. Briefly the plan is that all medical activities should cooperate with the Council of National Defense, which was created by act of Congress, August 29, 1916. Section 2 of the act is as follows:

"That a Council of National Defense is hereby established, for the coordination of industries and resources for the national security and welfare, to consist of the Secretary of War, the Secretary of the Navy, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, and the Secretary of Labor.

That the Council of National Defense shall nominate to the President and the President shall appoint an advisory commission, consisting of not more than seven persons, each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource, or be otherwise specially qualified, in the opinion of the council, for the performance of the duties hereinafter provided. * * * *

"That the Council of National Defense shall adopt rules and regulations for the conduct of its work, which rules and regulations shall be subject to the approval of the President, and shall provide for the work of the advisory commission to the end that the special knowledge of such commission may be developed by suitable investigation, research, and inquiry and made available in conference and report for the use of the council; and the council may organize subordinate bodies

for its assistance in special investigations, either by the employment of experts or by the creation of committees of specially qualified persons to serve without compensation, but to direct the investigations of experts so employed."

On October 11, 1916, President Wilson announced his appointment of the Advisory Commission as follows:

Mr. Daniel Willard, President of the Baltimore & Ohio Railroad, Chairman.

Mr. Illis Godfrey, LL. D., President of Drexel Institute, Philadelphia.

Mr. Howard E. Coffin, Detroit, (who is also chairman of the Committee on Industrial Preparedness of the Naval Consulting Board).

Dr. Franklin H. Martin, Chicago.

Mr. Julius Rosenwald, Vice President of Sears, Roebuck & Company, Chicago.

Mr. Bernard Baruch, Financier, New York.

Mr. Samuel Gompers, President of the American Federation of Labor.

The President in announcing the above appointments said:

"The personnel of the Advisory Commission of the Council of National Defense, appointed without regard to party, marks the entrance of the non-partisan engineer and professional man into American governmental affairs on a wider scale than ever before. It is responsive to the increased demand for and need of business organization in public matters and for the presence there of the best specialists in their respective fields. In the present instance the time of some of the members of the Advisory Board could not be purchased. They serve the government without remuneration, efficiency being their sole object and Americanism their only motive."

The executive activities of the Council of National Defense are coordinate and carried out through the medium of the Directors of the Council of National Defense, Mr. W. S. Gifford, and the chiefs of the various departments represented by the members of the Advisory Commission. Dr. Frank F. Simpson is chief of the Medical Section of the Council of National Defense.

The organization of the council and of the advisory commission provides that each member of the advisory commission shall gather about himself for the most effective coordination of the activities he represents, a committee or board consisting of representatives of governmental departments on the one hand, and civilian members on the other hand.

The medical committee, of which Dr. Franklin H. Martin is Chairman, consists of:

William G. Gorgas, Surgeon General of the U. S. Army.

William C. Braisted, Surgeon General of the U. S. Navy.

Rupert Blue, Surgeon General of the U. S. Public Health Service.

Col. Jefferson H. Kean, Director General of Military Relief of the American Red Cross.

Dr. William H. Welch, Member of the National Council of Research.

Dr. William J. Mayo, Chairman of the Committee of the American Physicians on Medical Preparedness.

Dr. Frank F. Simpson, Chief of the Medical Section of the Council of National Defense, and the Secretary of the Committee of American Physicians on Medical Preparedness.

Many medical problems of defense which have been bearing on the national defense are considered by Dr. Martin's committee and by the advisory commission and the Council of National Defense before being put into action by the governmental departments concerned.

COMMITTEE OF AMERICAN PHYSICIANS FOR MEDICAL PREPAREDNESS—ITS ORGANIZATION AND COMPONENT PARTS.

In April, 1916, the national committee was appointed by the joint action of the presidents of the American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and the American College of Surgeons. To that committee was delegated the responsible duty of formulating plans whereby the civilian medical resources of the United States might be ascertained and effectively coordinated.

The national committee organized, selected a chairman and secretary and an executive committee, and appointed a state committee of nine men in each state.

It is the fixed policy of this committee that all presidents and secretaries of the various state medical societies shall be members of their respective state committees during their incumbency in office. From the first it was contemplated that at the proper time the organization of committees would be perfected in each county of the country. That time has now come and such organizations are being rapidly perfected. In each instance the state committees are expected to select the county committees and to supervise their formation.

It is the fixed policy of the Committee of American Physicians on Medical Preparedness that the various important medical interests and activities of each county shall be represented on the county committees. This is done for the purpose of coordinating the

important interests and activities so that the medical profession of the nation may present a compact and effective organization for the purpose of aiding effectively in the national defense. In order that this plan may be carried out with uniformity and precision throughout the country, the various state committees have been requested to have all county committees bear the following distinguishing name: The Auxiliary Medical Defense Committee of County, in State. The state committees have also been requested to provide that the county committees shall include the following in their list of members:

1. All members of national committee of the Committee of American Physicians for Medical Preparedness, resident in the individual county.

2. Members of the state committee resident in or near the individual county.

3. Representatives of the U. S. Army resident in the individual county.

4. Representatives of the U. S. Navy resident in the individual county.

5. Representatives of the U. S. Public Health Service resident in the individual county.

6. Representatives of the State Board of Medical Examiners residing in the individual county.

7. Representatives of the state and city Public Health Service.

8. Ranking medical officer of the National Guard.

9. President and Secretary of the local Medical Officers' Reserve Corps Association, if there should be such an organization.

10. Deans of medical schools.

11. President and Secretary of the County Medical Society.

12. President and Secretary of any other important medical societies.

13. Medical Director of the local Red Cross Units.

14. Other representative medical men.

From time to time specific duties will be assigned to the various state and county committees. These duties will be in accord with the policy of the Council of National Defense, and should be executed promptly and precisely by those who are called on to cooperate in this manner with the Council of National Defense.

The committees will call to their assistance those who have been appointed field aids by their various state committees and such other physicians as they may desire to have cooperate with them.

Among the specific duties which the county committees are requested to perform at this time are the following:

First: That these committees cooperate

with the national and state committees of the Committee of American Physicians for Medical Preparedness in their efforts to gain needed information regarding the civilian medical resources of their own communities, and in their efforts to coordinate civilian medical activities for prompt mobilization in case of need.

Second: That they secure applicants: (a) For the Army Medical Corps; (b) for the Medical Officers' Reserve Corps; (c) for the Naval Medical Corps; (d) for the Coast Defense Reserve Corps of the Navy; (e) for the National Guard.

Third: That they cooperate, individually and collectively, with the Medical Department of the Army, Navy and Public Health Service and with the Council of National Defense.

Fourth: That they cooperate with the Red Cross in their efforts to bring that organization to the highest point of efficiency.

Physicians recommended for any of the above service should be of the highest type. They should be free from suspicion of addiction to drugs or drink. Medical officers who go to field duty should by preference be under the age of 45.

On April 26, 1916, the executive committee of the Committee of American Physicians tendered the services of the committee to the President of the United States. He expressed himself as being pleased with the patriotic tender of services and regretted that existing laws did not permit the acceptance by the federal government of gratuitous services, but stated that the matter would be referred to the Secretary of War and the Secretary of the Navy for the purpose of devising plans by which the good offices of the medical profession could be accepted and utilized to best effect by the federal government. He further stated that the plans would be referred to the Committee of American Physicians for comments and suggestions. The executive committee was permitted to make suggestions regarding the bill creating the Council of National Defense. During the last year this committee and its various subsidiary bodies have been actively engaged in formulating and carrying out various activities in conformity with the general plans for national defense, which have been undertaken by the federal government.

The splendid work done by the various state and other committees was of such extent and value that the Council of National Defense at its first meeting requested the Committee of American Physicians to continue their various activities under the guidance of the Council of National Defense. Since that time the various activities have gone forward with renewed energy.

Some of the activities which have either been completed or are well under way follows:

1. Some 20,000 medical men selected from all parts of the country have been classified according to the training and the kinds of work they do best.

2. An inventory of hospitals and other medical institutions is well under way.

3. It has been the fixed policy of the Committee of American Physicians to aid the American Red Cross in bringing its medical department to the highest point of efficiency. With that object in view, and in order to foster the spirit of cooperation, the members of the national committee of the Committee of American Physicians accepted invitations to become members of the national committee of the medical department of the American Red Cross. In order further to promote the harmonious cooperation of the two organizations, most of the members of the various state committees of the Committee of American Physicians were also made members of the state committees of the American Red Cross. The various county committees will also be expected to cooperate in carrying out the plans of the two organizations.

4. The establishment of military training for senior medical students in a large percentage of the high grade medical schools of the country.

5. The establishment of more effective military training for hospital groups for members of the Medical Officers Reserve Corps, for dental students and others.

6. The appointment of a Committee for the Standardization of Medical and Surgical Supplies and Equipment. The purpose of this work is to designate a list of articles essential to the successful conduct of civilian and military medical and surgical activities so that in the event that it should become necessary to curtail production all of the energies of the drug and instrument makers would be devoted to necessary articles rather than to those which are desirable but not essential. On this standardization committee are representatives of the Army, the Navy, the Public Health Service, the Red Cross, the Council of National Defense and a number of the most distinguished members of the various specialties of civilian medicine. In their work of coordination and standardization this committee will take counsel with the manufacturers of the various supplies under consideration.

7. Much valuable information supplied by medical and other observers who have worked in the war zones of Europe is being gathered and classified.

8. The presidents of important national medical organizations of the country have been requested to suggest to the medical sec-

tion of the Council of National Defense the kinds of work which members of those organizations are best fitted to perform, and to suggest plans whereby their activities and resources might be utilized to best advantage. This request does not contemplate an inventory and organization of these resources. The purpose is that having received suggestions offered by the various organizations, those suggestions will be maturely considered and such as conform to the plans of the Council of National Defense and can be utilized to advantage, will be adopted. The various organizations will, in that case, be requested to cooperate fully and promptly in perfecting the plans of the Council of National Defense.

The foregoing memorandum embodies only a very small percentage of the problems now under consideration. It is neither wise nor desirable, however, to present them in detail at this time.

MEDICAL PREPAREDNESS IN KENTUCKY.

Under existing conditions, it is urgent that every physician under fifty-five years of age who can pass the strict professional and physical examinations, as well as every other loyal citizen of America, should be prepared to render active service to the Federal Government, remembering that the protection afforded by that Government makes it possible for its citizens to enjoy liberty, peace and prosperity. No other profession has or will be called upon for the service and sacrifices which are necessary from the medical profession. Physicians do not need the oratorical spurs of either the lawyers or the ministers to get them to see and know their evident duty. The Kentucky State Medical Association and the Kentucky State Board of Health are both ready to do their full duty in the matter.

The following resolution was passed at the last meeting of the State Board of Health and was transmitted to and accepted by the President:

RESOLUTIONS

Whereas, our country has been attacked and its freedom threatened, resulting in a state of war with the Imperial Government of Germany; and,

Whereas, the Secretary of the Navy and the Surgeon General of the Navy have requested this Board to waive certain educational requirements so as to make it possible to secure the medical corps necessary to care for the forces on the sea, who will be the first line of the nation's defense; now, therefore,

Be it Resolved by the State Board of Health of Kentucky that it offers to the President of the United States its organization,

personnel, equipment, and the active service of its effective trained health officers; and assures him of the readiness of as many physicians and surgeons as may be assigned as Kentucky's quota to serve in whatever capacity, wherever necessary, within the country or over seas; that the Board grants leave of absence to any of its officers, employees or appointees for such time as they serve with the country's armed forces, with the assurance of their immediate reinstatement upon their return: that it expressly waives any restrictions as to length of college term or other pre-requisite for graduation from medical college to physicians and surgeons who become commissioned officers after examination in the Army, Navy or Public Health Service and will recognize certificates of honorable dismissal from the medical corps of these services, accompanied by proof of moral character, as evidence of the medical knowledge necessary for licensure in Kentucky.

Kentucky's medical organization has been recognized in the selection of the Secretary of its medical organization, Dr. A. T. McCormack, as President of an Examining Board, at Bowling Green, for applicants for commissions in the Medical Section, Officers' Reserve Corps. All the physicians who enroll in the Medical Reserve Corps will not be called into the Army. The War Department understands quite clearly that there must be doctors for those who stay at home as well as those who are at war, and adequate arrangements will be made to protect every section of the State.

It is suggested that you talk these matters over with the editors of your newspapers. It would be well to have all the newspapers of Kentucky say something about the practically unanimous response of our profession. The JOURNAL thinks this is particularly important just at this time when the courts and people generally are careless in their consideration of the profession. It does not seem fair for us to be asked to go to the Front, give up our practice and risk our lives to find that the care of the people back at home has been turned over to any quack or charlatan who will make any sort of pretentious claim. It would be well for the papers of Kentucky to recognize that the Army will not permit irregulars of any kind to practice on soldiers, and it is difficult for us to understand why the women and children should be subjected to their mistreatment.

The State Association has asked that a call meeting of every county society be held and that the members of the profession of each county agree to care for the practice of any of our number who are called on to do military duty outside of the State, paying one-third of any fees collected to the family of the

absent physician. This is equitable and square and will doubtless have been adopted by many societies by the time this is published.

MEDICAL PROFESSION DOING IT-SELF PROUD.

Under the above caption, *The Times-Journal* of Bowling Green, recently contained the following timely editorial:

"Patriotism which makes itself visible in joining in preparedness parades or flying the stars and stripes in the most conspicuous place is alright as far as it goes but four men in a recruiting station are worth four hundred in a preparedness parade. And for this reason we wish to doff our hats to the medical profession. While other learned professional men have been doing duty overtime making patriotic addresses comparatively few have joined the colors while hundreds of thousands of physicians are offering their services to their country. The true physician, however, has in all ages proven himself a real hero in times of war. A man who is brave enough to face danger in his daily duties going about among contagious diseases when there is no interested enthusiasm or blare of trumpets to urge him on need not cause surprise when in times like the present that spirit of real bravery which, for years has actuated him, causes him to offer his services to his country. Danger to him comes only to steel his arm to combat and to conquer. And yet, with a record in the past of bravery and self-sacrifice, and with the same rule of bravery and sacrifice being followed by men of this profession, it is disgusting to see the decisions often rendered by the courts. We refer to such cases where a quack or charlatan who is out for the almighty dollar and preys on the ignorance and prejudices of the people is upheld in court against a member or members of a noble profession, which has won its spurs through long years of patient, brave, helpful service.

"And yet, during times of public stress like these, we are permitted to view people and events from a different angle. Men and professions are unmasked and real manhood, the kind that counts, and principles that endure, are placed on the pinnacle where they rightly belong while littleness and cowardice are given their first deserts."

FOOD AND BEVERAGES.

This issue of the *JOURNAL* is especially devoted to foods and beverages. We have made no special effort to secure advertising material along this line, but we want the physicians of the State to pause and think of the importance of the practical question and to advise the people of the various sections of the State in regard to it. The following resolution was passed at the recent meeting of the State Board of Health and its timeliness will be appreciated by everyone of our readers:

RESOLUTIONS

Whereas, war is necessarily wasteful of the United States and the Imperial Government of Germany, which demands from the State the utmost conservation of its resources for the common weal of our country and of the civilized world; and,

Whereas, war is necessarily wasteful of the human beings of the nations engaged therein, Be it resolved by the State Board of Health of Kentucky:

1. That county and city boards of health are instructed to publicly announce and rigidly enforce the statutes of the Commonwealth and city ordinances and the rules and regulations of this Board with a view to preserving the health and lives of as many as possible of the fourteen thousand which our Vital Statistics Bureau indicates are dying each year from preventable diseases and the far greater number seriously ill from the same causes.

2. That our farmers be urged to plant every available acre in food-producing grain for man or beast, and that both farmers and city folk be urged to plant gardens wherever possible in order to conserve the nation's food supply.

3. That housekeepers be urged to prepare and cook only necessary nourishing food, omitting luxuries as far as is expedient; and, with this end in view, that the Secretary be instructed to request the Heads of the Departments of Household Economics, at the State University and the Western and Eastern Normal Schools, to prepare a Kentucky cookbook, showing simple and attractive methods of preparing the products of Kentucky's farm and garden, so as to enable our people to nourish themselves with their own resources and that this be given widespread, free distribution as a Bulletin of the Board.

4. That the cooperation of all the people of Kentucky be requested in order to make this program of conservation practicable, in order that our Commonwealth may do far more than its share in this war, as it has in all past wars in which our country has been engaged.

It is of special importance that housekeepers be urged not to waste food. The Board hopes to have its Kentucky Cook Book ready within a few weeks. We will be glad to have suggestions for it from physicians or their wives.

Will you not look through the advertising pages of this issue of the Journal, and write for advice or samples? The Editor can assure you that they are all right, for he has tried them.

MARION COUNTY.

The JOURNAL wishes every county in Kentucky could have a secretary and health officer like the one in the good County of Marion. Dr. Kobert reported every physician in the county in good standing before the first day of April, and every meeting of the society is a good one. There are a lot of other counties like this, and we would suggest to some of our readers who are in sections where the society work is poor, that they arrange to attend one or two such meetings as are held in Lebanon, and then return and do likewise.

AMERICAN MEDICAL EDITORS' ASSOCIATION, JUNE 4-5, 1917.

The annual meeting of the American Medical Editors' Association will be held at the McAlpine Hotel, New York City, on June 5th and 6th, under the Presidency of Dr. G. M. Piersol, Editor of the American Journal of Medical Sciences.

A most interesting and instructive program is now being prepared and it is contemplated that the fourth coming session will be the largest ever held in the history of the Association.

The 48th anniversary of this Society will be celebrated by a banquet on the evening of June 5th, at the McAlpin Hotel.

A PATRIOTIC OFFER.

The Christian County Medical Society always does the right thing at the right time. At their April 17th meeting, they unanimously passed a resolution offering the services of the society and each of its members to such or any department of the United States Government as may need them. This society is composed of many of the best trained and most efficient physicians in Kentucky. The physicians all over Kentucky are responding to the country's call, but Christian County is the first to come in unanimously and the JOURNAL, therefore, feels that they deserve special commendation and notice.

SCIENTIFIC EDITORIALS.

MEASLES.

The present epidemic of measles has served to emphasize the fact that measles is far from being the trivial disease that it is commonly considered to be. The deaths in the city of Louisville during the recent epidemic have been greatly out of proportion to the expected mortality. It is possible that comparative freedom from epidemic attacks has lulled us into the feeling that it is not a severe disease. Our recent experience has made us fully realize its gravity in cases not properly watched and treated.

A recent text book on the treatment of infectious diseases has made some radical advice in regard to measles. The first is that the child should be kept in a room with plenty of sunlight. Adults who have suffered from measles report that light is very painful to their eyes and it would reasonably seem to infer that it would be equally painful to children. The photophobia in many cases is quite marked, and it is quite apparent why this pain and distress should be aggravated by strong daylight, in fact loss of eyesight has resulted in certain cases where proper care was not taken to lessen the irritation of the conjunctiva by all means available. In the second place it is suggested that cold air and sunlight tend to prevent and relieve pneumonia. Here again one must remember that there are many different conditions described as pneumonia; it is probable that there are as many different types and combinations of organisms causing pneumonia as are found in that other hybrid disease called rheumatism. There are, however, two quite clearly marked forms of pneumonia, the lobar, or croupous pneumonia and the lobular, catarrhal, or broncho-pneumonia. It is very probable that many cases of lobar pneumonia would be made more comfortable by inhalation of cold air, and if the child is suffering from a lobar pneumonia as a result of measles there would be no objection to fresh cool air in the room, but this is not the same thing as the statement that fresh cold air should be used during the measles. Lobar pneumonia is essentially a cold weather disease, at least in this section it is rare unless from undue exposure in children. It is not clear why one who has a predisposition to pneumonia should be unnecessarily exposed to cold draughts; if the pneumonia is of the broncho-type the effect of cold air is far from being beneficial. The recent investigation of John Lovett Morse has shown that in such cases fresh air is desirable, but it should not be cold. It would seem that a child suffering from a general catarrhal infection of the mucous membrane from an at-

tack of measles should be protected from any outside influence which would increase the congestion and aggravate the catarrhal out-pour into the bronchial tubes. Such cases have seemed to be benefitted by warm moist fresh air. In adults a slight increase in the output of mucus in the bronchi would not be serious because their muscles of expiration and inspiration and their intelligence enable them to rid themselves of the mucus. In the young child we have none of these to aid us and the child will die from acute suffocation or from the extensive involvement of the lobules of the lungs from the bronchial area.

Pneumonia complicating or following measles whether of catarrhal or croupous type has been very fatal and if the statistics could be accurately compiled would show that a very large mortality in the recent epidemic dates back to measles.

The danger of otitis media purulent following measles has been a noticeable feature of this epidemic. When the child has had a previous attack of otitis media purulent, measles seems to have relighted the inflammation and a number of these cases have developed into mastoid trouble and some have resulted in meningitis and death. One should be guarded in the prognosis when there is possibility of such an outcome to the measles infection.

Ordinarily treatment with some opium derivative has been necessary to relieve the incessant, nagging, tearing cough. Where the cough has been entirely subdued the cases have apparently run a better course. There can be no good result when the whole bronchial tree suffers from the trauma of the repeated racking cough.

With the relief of the cough and the attention to other obvious details most cases will give little trouble. The one who wisely plans to protect against the dangerous sequela will have fewer of these to treat and fewer death certificates to sign.

PHILIP F. BARBOUR

Scorbutus in Young Children.—Hart has found only fifty-one articles on this subject in recent years. He summarizes them and reports anatomic research and experiments on monkeys which have confirmed the identity of scorbutus in both infants and adults. The bone changes are identical but he warns that the diagnosis may be difficult when the classic symptoms are absent: bleeding of the gums, pains in movements and swelling of the joint ends of the bones, generally in the leg, while the joints themselves are spread.

THE PROBLEM OF THE PATIENT WITH LUPUS.

In practically all parts of the country the profession and the laity have been educated to the necessity of having sanatoriums for the treatment of tuberculosis. In every state one finds evidence of this in the private and public bodies which are maintaining institutions where the indispensable benefits of fresh air, good food, and rest are furnished to the victims of the dread "white plague." Altho so great is the need that even yet we have not by any means the number that could be advantageous used, still in the majority of cases of pulmonary tuberculosis it is possible to place the patient in a suitable sanatorium, even when the patient is able to pay nothing at all. Unfortunately, however, to the majority of people the word tuberculosis would seem to mean phthisis only, and the victim of tuberculosis of a non-pulmonary character is but little better provided for now than he was years ago. The treatment of the so-called surgical forms of tuberculosis, such as tubercular epididymitis, cystitis, nephritis, enteritis, peritonitis, etc., is as a rule discouraging unless the local surgical treatment is abetted by the general measure against tuberculosis, that is fresh air, good food, rest and a quiet, regular regime. Yet it is a most difficult thing in most localities to secure these advantages for the patient suffering from a form of tuberculosis other than pulmonary, except in the case of children. Often even when the patient is able to pay he will be refused by the private institution with the explanation that they have no surgical service, that their nurses object to doing dressings, or that the pulmonary patients object to the presence of surgical cases. In the public or charity institution the same difficulty will be met with, the surgical cases being refused or else placed on the waiting list for a long time while pulmonary cases are taken in ahead of them. However, it would seem of late as if the necessity of sanatorium treatment in other forms of tuberculosis has been to some extent recognized, since there is an increasing number of places to which these cases may be sent, with the exception of lupus. There is still no provision for the patient with tuberculosis of the skin.

There is no doubt that the methods of constitutional upbuilding and fortification through constant living out of doors, rest, sunshine, etc., which are customarily employed in phthisis are of great benefit in lupus. Besides this there is the very practical argument for sanatorium treatment that it isolates the patient from the general public and thus lessens the danger of that patient spreading the infection to others. The lupus patient is

by no means free from danger to others. In the case of pulmonary tuberculosis one contact with an individual suffering from phthisis is extremely unlikely to bring about infection; it is probably only after repeated exposures that the bacilli are able to gain a foot-hold and produce manifestations of the disease. But with lupus it is different; the infection may be contracted through a single contact. The lesions being on the surface, often open and oozing, it is easy to understand how it is that it may be spread so easily and in so many ways. We shall mention a few of the ways of which well-authenticated reports are on record: vaccination, piercing the ear for earrings, circumcision according to the old ritual (as is done to a large extent in Russia and even occasionally in this country), tattooing and scarification. Any contact with pus from a lupoid lesion is apt to be followed by the appearance of lupus, which partly accounts for its frequency among the lowest classes; owing to lack of cleanliness and overcrowding the infection is readily spread from one to another, while owing to the lack of ventilation and poor food it finds a lowered resistance and thus is able to establish itself in the fresh soil. Another fertile cause of tuberculosis of the skin is syphilis, and the occurrence of lupus in syphilitics or of mixed syphilo-tuberculids is quite frequent.

Statistics of the frequency of lupus in this country are few and unreliable; however it probably occurs in about 125 to 130 persons out of every hundred thousand of population. In Germany the figures are given at 65 per hundred thousand, in France 150, in Russia 200, and in England 250. This means that in the five greatest and most civilized countries one out of ever 600 persons is a sufferer from this disfiguring disease. Certainly there are enough cases to make it a matter of moment that there is so little chance of securing sanatorium treatment for them. Even if there is but little danger of a lupus patient acquiring the pulmonary form of infection from the foci in the skin—and in our experience we have not found more lupus patients suffering from phthisis than non-lupus patients, probably owing to a certain amount of immunity acquired by the other tissues from the presence of the bacilli in the skin—yet the danger and discomfort to the patient requires that he should be rid of the infection as soon as possible. There are but few persons who have lupus who do not suffer considerable mental depression and as a result thereof lessened physical well-being as a result of the disfigurement they bear, especially since it is almost always prominently located, on or around the face. Moreover there is the danger to life itself owing to the marked and characteristic cicatrization, which in lesions around the nos-

trils and mouth—a favorite location of lupus vulgaris—may reduce the opening of the mouth so as to interfere with speech, mastication, even the introduction of food, eventually leading to malnutrition and sometimes death. The deformity around the orbit may cause loss of sight, either through direct extension of the tuberculosis or through failure of the eyelids to protect the eye. It is not denied that purely local treatment results in the cure of many cases, but there would be more cures and quicker results were the benefits of the sanatorium treatment added to the local treatment.

Not only is there no proper provision for the lupus patient in our sanatoriums, but owing to the repulsive appearance that so often results from the ravages of this disease he is deprived of the means of securing care and attention in other ways. He is treated as a pariah, as an offender on whom retribution has fallen for some sin. Those who are able to work are often refused employment owing to their appearance; customers object to being waited on by them, fellow-workmen protest against having to work side by side with them. Hospitals, hotels, boarding-houses and restaurants do not want their patronage. We know from our own experience in trying to make arrangements for out of town patients how bitter is the lot of the individual with a lesion on the face. We were unable to secure accommodations for such patients except at one boarding-house which finally consented to set aside for lupus cases their most undesirable room. Even at this place the conditions imposed on the patients were most mortifying and inconveniencing. They were absolutely forbidden to use the front entrance or to enter the general dining room, or to talk to other patrons or to linger in the halls. As only one room was allotted to these patients, in case two happened to come to the city at the same time they could either arrange to "double-up"—where that was possible—or else the second comer was turned away, to walk the streets all night, perhaps, an unwelcome stranger with every door closed against him. Pariahs, indeed! That the boarding-house keepers and managers of hotels and hospitals are not entirely to blame, we allow, since they are merely obeying the command of their patrons. In our own office we have had patients object to certain particularly offensive-looking individuals being allowed to sit in the general reception room, so that to spare the one embarrassment and the others disgust and fear we have had the lupus patient await his turn in a separate room. Probably a considerable part of the feeling of repulsion created by the advanced case of lupus is due to a mistaken belief on the part of the laity that all these "eating diseases" and disfiguring

lesions are due to a syphilitic infection; there is, thus a feeling that the disfigurement is a result of the person's own sin and no one need show him kindness or spare his feelings; moreover, the fear of infection with syphilis is much greater than would be a fear of infection with tuberculosis of the skin.

A more complete knowledge of lupus must be disseminated among the laity if we hope to check the growing incidence of this disease, just as it has taken an educative campaign in pulmonary tuberculosis to check the ravages of phthisis. Our fight against skin-tuberculosis must be largely prophylactic. Careful history records in our cases of lupus has nearly always developed the fact that the patient was in close association over a long period of time with some person suffering from tuberculosis, usually a member of the same family, and living in the same house or even room. The removal of these infectious foci is the surest way of reducing the number of new cases of tuberculosis of all kinds, and this can be accomplished by establishing enough sanatoriums to accomodate all cases of tubercular infection, whether of lungs, of skin or of other tissues. Moreover, at least some of these sanatoriums should be especially designed for the treatment of skin-tuberculosis should have such necessary equipment as the X-ray, Quartz lamp, sun-parlors, and surgical and medical agents. In addition laboratories should be maintained at these institutions, both to aid in the early diagnosis of the lesions and to pursue investigations and experiments which may lead to important improvements in our methods of diagnosing and treating such cases.

M. L. RAVITCH, AND S. A. STEINBERG.

Electric Accidents.—Fischl reports a case in which a young electrician dropped to the ground unconscious as a short-circuited current of 5,000 volts passed from one hand to the other. Although the heart was on the route of the current, yet little injury followed; after brief bradycardia there was arrhythmia but the pulse returned to normal the second day under digitalis, and there was not even abnormally high blood-pressure the morning after the accident. The electric burn of the hand was comparatively insignificant, a grayish line running through it resembling an old knife cut well on the way to healing. Consciousness returned after half an hour and the patient complained of headache and great sensitiveness to light, even with the eyes shut. There were also much depression, weakness and somnolency, with paralytic conditions in the muscle, but recovery was soon complete as the burns on the legs healed. Professional electricians do not seem to have to contend with the psychic shock usual under other conditions.

ORIGINAL ARTICLES

RESUME OF THE IMPROVEMENTS IN THE TREATMENT OF WOUNDS DURING THE PRESENT WAR.*

By IRVIN ABELL, Louisville.

While theoretically the statement seems reasonable that therapeutic indications in traumatic injuries should be practically identical in military and civil practice, from a practical standpoint this observation is not literally true. It must be remembered that almost without exception military practice represents emergency surgery, whereas in civil practice surgical operations are for the most part elective in character. Moreover, wound infection is common in the former and exceptional in the latter, provided surgical procedures are executed without departure from modern conceptions of aseptic operative technic.

In the absence of personal experience in the treatment of wounds inflicted during actual warfare, I can only present a resume of the subject based upon available literature. It would be manifestly impossible, however, to trace the oscillating pendulum of professional thought through all the intricate mazes of military surgery, even were it desirable to so do; therefore only recent methods will be considered.*

In passing, the remark may be permitted that so-called modern improvements in the treatment of emergency wounds, military and otherwise, forcibly remind one of evolutionary changes characterizing surgical achievement in other directions, the pendulum apparently gravitating backward rather than forward, e.g., not many years ago antiseptics in surgery was discredited and displaced by asepsis,—just now chemical antiseptics are again enjoying a coruscating limelight prominence upon the surgical horizon. However, instead of "antiseptics" writers now use the word "sterilization" of wounds, which, if attainable, represents the greatest advance ever made in surgical achievement.

"It is interesting and at the same time somewhat discouraging to note that the intensive study of the best scientific minds in the world has as yet failed to evolve a treatment for infected wounds as clearly and demonstrably effective as to have received

*Read before the Shelby County Medical Society and Association of Railway Surgeons.

*The author of this resume is not a military surgeon, and therefore claims nothing from the standpoint of originality. The majority of the data presented herein have been excerpted from publications of other writers, a list of which will be found appended hereto, and to whom it is desired due credit be accorded.

general acceptance and universal application."

According to Morison, wound infection has been the greatest curse of war, and until quite recently all methods have failed to satisfy the most moderate surgical ambition; but now many wounds can be sterilized and infection inhibited or limited by applying a paste composed of bismuth subnitrate, iodoform and paraffine.* The advantages claimed for this application are: (a) that the dressing need not be changed for days or weeks, if the patient is free from pain or constitutional disturbance, and (b) that pain is lessened and healing promoted. However, as it seems wounds thus treated must necessarily heal by second intention, the method is a doubtful improvement in surgical technique.

Sherman states that experience during the last fifty years in civil, military and industrial surgery has contributed little toward combatting wound infection. The variable character of injuries, the nature of infection and tissue damage, seem far greater in the present than in previous wars, the virulence of wound infection surpassing anything heretofore known to military practice. Shell and bullet wounds not only cause great structural damage, but virulent bacteria are carried into the tissues. The micro-organisms most frequently found are the bacillus tetani, the gas bacillus (*aerogenes capsulatus*—Welch), the putrefactive organisms, the streptococcus, and bacillus coli. The staphylococcus pyogenes aureus, which is usually present in civil practice, is noted only in late stages of wound infection.

Wright irrigates and dresses military wounds with a hypertonic salt solution, the main function of this dressing being to stimulate the effusion of lymph from the walls of the wound. He claims this lymph has important antiseptic powers, and also contains leucocytes possessing phagocytic properties.

Various writers mention the use of hypochlorite solution. In certain quarters the application of iodine is said to be completely discredited and seldom employed. Magnesium sulphate and glycerine combinations have been advocated. Hull introduced the use of "salt sacks" by which the wound is filled with salt, thus perfectly draining it by osmotic action, and states the dressing need not be changed for a week. Salicylic acid, about two drams of a saturated alcoholic solution to a pint of water, has been highly recommended. Salicylic acid and gelatin, picric acid, and also the use of vaccines have received favorable mention.

According to Sherman, experience has shown that in military wounds the use of iodine, Wright's solution, mercuric bichloride, the carbolic groups, and countless other antiseptics, may fail to prevent wound infection. The vast majority of deaths, amputations, disabilities, and complications, are due to infection. By controlling infection at the beginning, septicemia, suppuration, and other complications, may be avoided. The principles of industrial and civil surgery are equally applicable to wounds received in war. To be effective treatment should be started as soon as possible after the wound is inflicted. Chemical sterilization of a wound can only be obtained by "a strong germicide which is a non-toxic and a non-irritating antiseptic." Carrel states all wounds of war produced by shells, torpedoes, grenades, etc., are infected, and former methods of treatment in vogue were powerless to prevent gas gangrene, septicemia, and chronic suppuration. Tuffier says eighty per cent of the amputations are made necessary by infection, and twenty per cent by tissue destruction. He is confident if Carrel's method is followed, almost all amputations due to infection can be prevented.* Keogh believes seventy-five per cent. of the deaths which occur after the first twenty-four hours are due to infection. Carrel and Chutro are of the opinion that in ninety-five to ninety-eight per cent. of cases secondary hemorrhage is the result of infection. Secondary hemorrhage rarely occurs where Dakin's solution is used in the beginning.

Gas Infection: Papeyre states that gas infections of war injuries comprise three clinical groups: (a) gaseous septicemia, (b) gaseous gangrene, and (c) local gaseous infection. Gaseous septicemia appears early and has a rapid course, death usually occurring from thirty to fifty hours after injury. Gaseous gangrene has a lesser gravity, appearing about the third day, and is amenable to surgical treatment. Clinically this form may be subdivided into gaseous, edematous, or gangrenous, according to the particular symptom which predominates. Early amputation is the only treatment for an established gaseous gangrene. Local gaseous infection is sometimes characterized by the early appearance of gas about the wound with no tendency to diffuse. The usual cleansing and drainage generally causes local gas infection to disappear.

Penhallow also divides infection by the gas bacillus into three groups: (a) a purely local infection recognized by the bacteriological

*Bismuth subnitrate one ounce by weight, iodoform two ounces by weight, paraffine q. s. to make a thick paste. The wound is literally "filled" with this mixture.

*The Carrel method of applying Dakin's solution in the treatment of infected wounds, especially those inflicted during actual warfare, will be later described somewhat in detail, and illustrated by suitable drawings, etc.

findings, the dirty appearance of the wound, and the characteristic odor, (b) a wound with spreading cellulitis, with a tendency to toxemia, and (c) typical gas gangrene with circulatory disturbance and tissue devitalization, in which the first and second signs are greatly intensified. After the diagnosis of gas infection has been perfected, the patient is anesthetized and the surrounding skin shaved and painted with iodine tincture; slough, traumatized tissues and necrotic areas are excised; the wound swabbed with carbolic acid followed by alcohol or iodine, and dressed with gauze soaked in hypochlorous acid solution or chlorinated soda. If cellulitis is present, all infected parts are freely incised and drainage practiced by rubber tubes, rubber tissue, or gauze. Amputation should be performed in extensive injuries of the upper or lower extremities, and the wound left open. Wounds infected by anaerobic bacteria do better when they are freely exposed to the air. Peroxide of hydrogen and other antiseptics have been used in these infections, but free incision and drainage, followed by continuous bathing with hypochlorous acid or salt solution, seems to give the best results.

From clinical study and post-mortem findings, Wallace concludes (a) gas gangrene is a "disease of the muscles," the infection being rarely noted without muscle injury advancing beyond the intermuscular areolar spaces; (b) the circulation should be preserved when possible: tension from effusion or gas should be relieved by incision; important vessels should be sutured and preserved if possible; (c) incision or ablation of the injured muscle is often sufficient to arrest the disease as usually only the muscle becomes gaseous; (d) when gas gangrene occurs in a limb distal to the wounded segment, it nearly always means that the main artery is obstructed and amputation of the gangrenous segment is the only course; (e) the presence of crepitation apart from other signs is of no special importance; the condition of the tissues and number of dead muscles should be ascertained before amputation is performed, otherwise a limb or a very considerable portion of its length may be sacrificed unnecessarily.

Extraction of bullets: According to Sencert and Le Grand the consensus of opinion is that immediate operation should be undertaken in war injuries, excepting where perforating bullets have left only two small orifices; and especially is there agreement as to the necessity of opening the wound and extracting the projectile. Such complete operation should always be performed if surgical means are available and there is no contraindication. Of the methods of localizing and extracting projectiles, they prefer surgical removal under guidance of the radio-

graphic screen, the surgeon having the picture of the object under immediate gaze. From their experience with both radiography and radioseopy, they have reached the conviction the latter is simpler, easier and more certainly and rapidly efficacious. They have been successful in 257 extractions of projectiles by this method. These included 52 from the upper limb; 168 from the lower limb; 23 from the thorax; 14 from the head. Excluding small projectiles deeply embedded in muscles or bones and not giving trouble, inaccessible encephalic projectiles, and intra-pulmonary projectiles, all others ought to be removed immediately if there is a good radiologic and surgical service.

Mercade thinks a projectile should not be removed under the following conditions: (a) if perfectly tolerated by the tissues and not causing functional detriment, (b) if the projectile is so small that search is likely to fail, (c) if the situation is such that the projectile can only be reached after considerable opening or risk to the patient, and (d) if the general condition is such that the presence of the projectile is secondary.

Secondary hemorrhage: Morris believes one of the most serious complications is secondary hemorrhage, and almost every case is infected. Secondary hemorrhage may originate from one of several causes: (a) a thrombosis closing the end of a severed vessel may become infected, digested and hemorrhage result, (b) a vessel wall may be contused and hemorrhage occur only after sloughing, (c) an intact vessel wall may be eroded by direct extension of infection from neighboring tissues, (d) a spurious aneurismal sac may become infected and rupture. In addition, the following factors must be considered: (a) a hemorrhagic diathesis, (b) jolting incident to transportation, and (c) erosion of a vessel wall from a foreign body. The onset of secondary hemorrhage is usually sudden and the patient may be found in collapse. The treatment should include control of the hemorrhage, and resuscitation of the patient. The former may be secured by ligation as far above the infected area as possible; frequently hemorrhage is recurrent, and if the bleeding vessel be in a limb, amputation as high as necessary should be undertaken. The latter is effected chiefly by normal saline hypodermoclysis and blood transfusion.

Tetanus: Little improvement has been made in the treatment of tetanus, although study of this unfortunate complication of military surgery has not been neglected. Fatalities from developed tetanus have not been reduced by therapeutic measures, but much good has undoubtedly been accomplished by the prophylactic administration of anti-tetanic serum.

Immediate suture: Although in immediate suture there is risk of infection, Gaudier and Montaz think when executed under well-defined indications, and with careful technic the procedure is not dangerous. They believe immediate suture of war injuries rests on a precise anatomo-physiologic basis, and that it can be accomplished in a great number of cases without risk, but in very special conditions, which are: (a) precocity of intervention, (b) excision of eroded tissue after removal of the projectile and associated foreign bodies, (c) perfect hemostasis, and (d) the possibility of watching the wound during the first days. In many instances the first and last conditions are not realizable, and in such cases it is better to have recourse to dressings with or without antiseptics, and to defer suturing of the wound until circumstances permit.

General treatment: Bazy claims the treatment of wounds is based upon two important facts: (a) that an infected wound does not unite by first intention, and (b) that a wound only ceases to suppurate when all decomposed substance has been eliminated; not only must foreign bodies and debris be removed, but likewise all tissue incapable of revivification. He has long ceased to use ordinary antiseptics, owing to their harmful effects upon the tissues, and has substituted the perfected non-cytotoxic solution of Dakin and Duret. Where the wound cannot be sutured at once he prefers Vallee's serum; he also uses magnesium chloride, which he considers a marvelous preserver and exciter of tissue vitality. All these chemical agents, however, are only aids to the surgical treatment which is and must remain the essential procedure and without which sterilization will be ineffective.

Roberts and Statham are enthusiastic over the "salt pack" in the treatment of infected gunshot wounds. They have attempted to standardize the treatment, but it necessarily varies with the site, nature and degree of infection. The wound is widely opened, foreign bodies and necrotic tissue lining the track removed, bleeding points ligated with catgut, and the salt pack then applied. Plain gauze (four to six layers) is "lightly wrung out" of five per cent salt solution and placed in the wound. It is important that every accessible pocket be filled with the gauze. A few forty grain tablets of salt are placed in the deepest part of the wound; a strip of gauze is then carried alternately from one end of the wound to the other; and numerous salt tablets laid between the successive layers. When the pack becomes flush with the skin surface a few more layers of gauze are applied, and over this a thick wool dressing completely encircling the limb, the whole being then firmly

bandaged. They have frequently packed wounds where main arteries were exposed without injury to the vessels. During the first twenty-four hours there is a copious exudation of serum, but after that no further exudation occurs. When the outer layer of the dressing becomes moist they are changed. It is very important that the wound be kept at rest. The indications for changing the pack are: (a) a continuously rising pulse rate; (b) increasing edema in the limb; (c) sudden onset of severe pain, this generally means spreading gas infection; (d) a persistent temperature rise for which no other cause can be found; (e) a change for the worse in the patient's general condition where elevation of temperature has persisted from the beginning; (f) oozing of pus from under the edge of the dressing, this is generally due either to the dressing having been left unchanged too long, or having been too loosely applied; (g) the dressing must be reapplied when the pack has become loose from diminution in circumference of the limb as edema disappears. Where the innermost layer of gauze is found firmly adherent to the wound surface, it is not removed but a new pack applied within it. When the wound is granulating normally it is inadvisable to continue the salt pack, and where the wound is not doing well with the salt pack, and a pure streptococcal infection is present, the use of one per cent. salt solution as a wet dressing, continuous irrigation or bath, will sometimes effect an improvement.

The open method: From the anatomo-physiologic point of view, Sencert says penetrating or perforating wounds with large orifices produced by shells, grenades, bombs, etc., have two fundamental characteristics: (a) they are contused wounds, or (b) infected wounds. Necrosis of contused tissues and microbial pollution rapidly lead to mortal septicemia either by circumscribed or diffused phlegmon or by air infection gaseous or otherwise. Dirty contused wounds must be cleansed and filled for repair. The nature of contused tissue and the extent of destruction are primary factors. It is in contused cellular tissue infiltrated with stagnant blood, in necrosing muscles, and in spongy masses of crushed epiphyses, that microbes find their breeding places. Besides, oftentimes there is a rapidly fatal intoxication from disintegration of the anatomic elements. Disinfection of wounds and transformation of necrosed structures into fresh tissue amenable to reparation can be effected by surgical means without the aid of antiseptics. Surgical asepsis is as indispensable in war as in peace. After having during weeks and months utilized every means of antiseptics, after having seen, in spite of lavage and continuous irrigations,

myositis and osteomyelitis evolve, he abandoned antiseptics and adopted asepsis. His so-called "wide surgical aseptic practice" consists in opening and exposure of the wound, removing projectiles and foreign bodies, complete excision of injured skin, cellular tissue, muscle, bone fragments either detached or adherent, until the contused wound is converted into a fresh area, vivid and ready for repair.

Fehling's experience with antiseptics, excepting collargol, has been unsatisfactory. The action of collargol is catalytic and induces a strong hyperleucocytosis. In abdominal operations, suppurating peritonitis, and bone injuries, it is necessary to keep the wound open by large drains to permit discharge of excretions; but in wounds of soft parts drainage tubes have proved unsatisfactory. The tube prevents the wound from closing; it keeps the edges apart; and as a rule pus appears after the drain is removed. The drainage tube, contrary to the rule of gravity, does not assist in the discharge of pus. Where it is desirable to keep the wound open, it is more expedient to use gauze strips soaked in sterile salt solution or other non-irritating antiseptic. He believes the passive, suction treatment of Bier is more rational than the antiseptic method of Carrel and Dakin, as the latter necessitates frequent handling and disturbance of the wound and also the patient. Suction treatment benefits by extracting pus from cavities with the induction of edema and subsequent contraction. It is also appropriate in the after-treatment of war injuries, especially where counter-opening is impossible; irrigation of such wounds has long been discontinued as unnecessary and harmful. However, the suction treatment is contraindicated if inflammatory processes exist or if fever is present. Fehling thinks the open treatment is a distinct advance in war surgery. This method is not employed in minor injuries which usually heal with dry scabs, nor in incised wounds which can be closed by suture; but it can be used in all large, ragged, necrotic wounds, especially bone injuries, and also in badly infected wounds. The pain caused by removal and renewal of bandages is avoided and there is less opportunity for development of pathogenic microbes. The scab is left untouched as long as possible, then carefully removed; and is soon followed by granulation; it is rare that inflammation appears; if abscesses form after incision, a dry bandage is applied for a few days, then the open treatment again instituted. Contrary to Lister's antiseptic method of excluding air from the wound, free airing in open wound treatment evidently has no drawback, even if the air contains suspended staphylococci and streptococci. The air is filtered through the gauze net. There is one disadvantage, i.e., the

gauze strip filled with secretions may cause irritation of adjacent skin. It is understood that in open wound treatment asepsis must be observed. This method is likely to come into competition with the antiseptic Listerian conception.

The method adopted by Hornus and Perrin in the treatment of all wounded, excepting those in a state of shock or with extensive hemorrhage, is to open the wound widely, with mechanical clearance of all foreign bodies or bone fragments, and chemical treatment by the constant application of Dakin's solution. They think healthy tissues resist the dissolving action of this fluid. The dressings following the first intervention are kept constantly saturated; between the sixth and twelfth day wounds so treated, no matter what their size or condition, are sterilized. In fifteen days (or often even in seven) the necrosed tissue is eliminated, the wounds have a good aspect, and can be sutured.

Based upon his work at Belgrade during the second Balkan War, during the present war in Vienna, and in other base hospitals, Bauer concludes: (a) shell wounds are serious because a greater percentage of them are infected than formerly, the reason being that artillery wounds predominate, (b) it is necessary to operate in most brain injuries and so-called "Steckschüsse," (c) most bullet wounds of the thorax are treated expectantly, (d) in penetrating abdominal wounds it must be seriously questioned whether operation will not give the patient a greater chance than expectant treatment, numerous excellent results have been secured from surgery during the first few hours after injury even if conditions for operation were not always ideal, (e) the ideal treatment for lesions of the extremities is to quickly remove all extraneous matter and loose fragments, applying a sterile dressing and fixation bandage.

In discussing the treatment of war wounds Seefish does not include asepsis or antiseptics, neither does he criticize the procedures advocated by Wright, Delbet, Carrel and Dakin, his object being to weight the advantages of the open treatment.

The advantages claimed by those who advocate the open treatment of wounds are: (a) discontinuance of tampons and drainage, (b) avoidance of painful changing of dressings, (c) quick abatement of fever, (d) good granulation, (e) avoidance of the bad odor of wounds, (f) effective struggle against the bacillus pyocyaneus, (g) favorable influence on gas phlegmons, (h) restricted use of drainage, dressings, etc. According to Seefish none of these claims can be supported. Tampons and drains are actually used by advocates of the open method, and to avoid slowness of epithelization salves and dressings are also employ-

ed. There is no proof that either bacillus pyocyaneus or gas phlegmons are better combatted by the open treatment than by the older occlusion methods. His conclusions are: (a) that the open wound treatment has no important advantage over the occlusion bandage, and (b) that it cannot be described as radical progress in the technical treatment of wounds. Only in certain kinds of wounds, such as those in the anus or bladder, has open treatment a really higher value; it has, however, numerous disadvantages, the most pronounced of which is slower wound recovery with consequent injurious effect upon later function. The sovereign method of treatment of wounds upon the battlefield is, and remains, according to Seefish's conviction, the professionally and carefully applied occlusion bandage watched by experienced assistants. Fixation as taught by von Bergmann remains the strongest weapon in the fight against wound infection.

In treating infected wounds the following resources are employed by Eastman in the American Hospital in Vienna: (a) removal of infected foreign matter, (b) wide incision and drainage, (c) immobilization, (d) continuous irrigation by the drop method with Dakin's solution of sodium hypochlorite, or continuous immersion in hot antiseptic solutions, such as acetate of aluminum, (e) stimulation of lymph drainage with Wright's solution (sodium citrate one part, sodium chloride four parts, water ninety-five parts), (f) regular and prolonged daily exposure to the rays of the sun, (g) continuous exposure of all wounds to the air without dressings whenever possible to avoid foreign body reaction. Clumsky's solution of camphor and phenol has not been used. Small superficial slightly infected tangential wounds are cleansed with normal salt solution or hydrogen peroxide and covered with peru balsam or Mickulicz's salve (silver nitrate, boric acid and vaseline). The agents which have proved of greatest value are: (a) solar therapy, (b) open treatment without dressings to promote drying and to prevent foreign body reaction, and (c) continuous irrigation with sodium hypochlorite solution. Naturally, says Eastman, the method of treatment and the agents to be employed in each case are determined by the nature of the infection and the character of the wound. He offers the following classification:

(1) Deep wounds with small openings, which provide poor drainage; these result usually from impacted rifle or shrapnel balls:

(2) Large lacerated wounds involving deep muscles or bone, caused usually by fragments of bombs, shrapnel or grenade casings and dumdums:

(3) Large and small shallow crater-like

superficial wounds, due to tangential shots or impact of boulders, and large superficial granulating wounds following incision for phlegmons.

In the first group the wounds are enlarged to afford proper drainage and permit removal of foreign bodies, fragments of bone, etc. If a limb is involved an immobilization splint is then applied. During the day the wound is exposed for hours to the rays of the sun, and at other times is irrigated, or covered with a wet dressing of Dakin's solution. Deep and extensive infections excellent results have been secured by immobilizing with splint leaving the wound exposed. A rubber drainage tube is inserted to the bottom of the wound, and the tube connected with a large receptacle containing warm Dakin's solution, which is allowed to flow into the wound by the continuous drop method as suggested by Carrel. A large hot wet dressing of gauze soaked in Dakin's solution and changed twice daily may be applied with advantage around the drainage tube. As a rule in less than a week the discharge of pus ceases even in the most active and serious infections, and the wound surface is covered with healthy granulation tissue. Foul odors disappear with surprising promptness under the treatment with sodium hypochlorite solution.

Serious and deep infections receive, in addition to the continuous irrigation and the open wound treatment, prolonged daily exposure to the rays of the sun. In superficial wounds solar therapy and the open treatment are especially efficacious. Foreign bodies are prevented from coming into contact with the wound by square windows or frames of cardboard maintained in position by adhesive plaster. Foreign body reaction is thus reduced to the minimum. Schumm, who suggested the cardboard window, has likewise prevented contact of dressings with the wound by small wire basket or cages also secured in position with adhesive plaster.

The actual healing factor in open treatment is still a subject of discussion. Walzel believes benefit is due chiefly to drying of the wound, and condemns the old-fashioned "clump dressing" as a breeding nest for bacteria. Schlossmann looks upon oxygen of the air and drying of the tissues as important factors in preventing the growth of anaerobes. Many have spoken of the damage done to granulations by frequent changes of gauze dressings. Braum especially deprecates the painful changing of dressing; Walzel and many other surgeons have been impressed with the advantages of frequent observation of wounds made possible by open treatment. Eastman is convinced that not the least of the virtues of open wound treatment lies in the prevention of foreign body action. Every

surgeon is familiar with the tissue phenomena induced by the presence of foreign bodies, such as gauze, drainage tubes, ligatures, etc. "Whether by a process akin to chemotaxis, or by response to physical trauma, or what not, it seems certain that not rarely wound secretion is continued by foreign bodies, such as gauze or drainage tubes introduced to absorb it or carry it off."

Large superficial granulating wounds bathed in copious, purulent or mucopurulent, foul-smelling discharge, when treated by the open air method often become dry in less than twenty-four hours. The granulations freshen and epithelization progresses rapidly. The solar rays considerably hasten the drying of secretions, and add to the stimulation of epithelial growth. They, moreover, inhibit the development of many pyogenic bacteria and the contaminating saprophytes. If smarting or burning occur, or the adjacent skin becomes decidedly hyperemic, the wound is covered with gauze laid upon a wire basket. Although dependence has been largely placed on sunlight and open treatment, together with Dakin's solution for continuous irrigation, frequent use of hot baths in solutions of older and better known antiseptics has been made. Continuous hot baths in solutions of bichloride of mercury, permanganate of potassium, acetate of aluminum, and physiologic salt solution, have been used with gratifying results in infected gunshot wounds. Continuous immersion lends itself especially to injuries of the hands and wrists or feet and ankles, as does continuous irrigation to other parts. The hot bath in Wright's solution is especially useful where it is desirable to stimulate lymph drainage, as in cases of diffuse cellulitis.

After amputations in serious infections of the extremities, open treatment has been the rule. The guillotine or flapless amputation of Fitzmaurice-Kelley, originally recommended by Van Buren Knott, has not been employed, it has seemed wiser to make short flaps and leave them wide open, to be closed with adhesive plaster strips after the danger of infection has passed.

Amputation: Thomas suggests that instead of the Celsus circular amputation, guillotine amputations, etc., some method be used which will minimize the pain of stump dressings and preclude the necessity of reamputation. He recommends the following method: Two lateral longitudinal incisions are made down to the bone on opposite sides of the point chosen for amputation, and at the level of their distal ends a circular incision is made through the soft parts. The two flaps are then reflected and the bone divided at a higher level. The flaps are then deflected and the funnel-shaped cavity packed with gauze

saturated with either Wright's hypertonic salt solution or Dakin's fluid, the ends projecting through the lateral incisions, and the flaps approximated with adhesive strips. Vessels are ligated with catgut instead of silk and no rubber is used for drainage. A small tube may be inserted for the introduction of Dakin's solution, but the author prefers Gray's salt packs.

The Carrel-Dakin method of wound sterilization: "Of the wounds treated at Compiègne by the Carrel method, ninety-nine per cent. have united by first intention, with practically no reaction either along the line of incision or at the stitches. It has been proved beyond any question of doubt, that Carrel's method of wound sterilization with Dakin's solution is a specific."

Sherman states that bacteriological examinations reveal the variety of microbial flora, anaerobes and aerobes being present in almost all war wounds. They are usually few in number during the early stages and localized about the projectile, clothing, or other foreign material. Infection spreads rapidly and the microbes are usually too numerous to be counted after the first thirty-six hours. It follows that it is of paramount importance to sterilize the wound in the early stages, and that it becomes more difficult to effect sterilization if the microbes are allowed to spread and penetrate.

All foreign material should be removed and the antiseptic agent employed during the first twenty-four hours. It is, at times, difficult or impossible to remove all foreign material mechanically, so one must rely upon some antiseptic solution which will penetrate the cavity and chemically destroy the bacteria without irritating the tissues or producing toxemia. The solution must be in constant contact with the tissues to bring about destruction of the micro-organisms. Dakin's solution (Daufresne) from a surgical standpoint sterilizes the wound, that is while a very low microbial count is shown on smear, theoretically the wounds are not sterile in that a culture can be secured from seventy-five per cent of the Carrel treated cases.

The solution should be made to penetrate all wound diverticula and must be renewed every two hours by instillation if complete sterilization is to be obtained. It has the advantage of being a strong antiseptic, with slight irritating properties and can be made by a competent chemist or druggist at a minimum cost. The original Dakin solution was prepared as follows:

140 grams dry sodium carbonate dissolved in 10 liters tap water to which are added

200 grams chloride of lime (chlorinated lime) and

40 grams boric acid.

The solution of sodium hypochlorite for surgical use must be free from caustic alkali; it must contain only 0.45 to 0.50 per cent. of hypochlorite; under 0.45 per cent. it is not active enough, and above 0.50 per cent. it is irritant. The following, in brief, is the method of preparing Dakin's solution (technic of Daufresne) now used:

- (1) Chlorinated lime (bleaching powder)200 gm.
Sodium carbonate, dry.....100 gm.
Sodium bicarbonate 80 gm.
- (2) Put the chlorinated lime in a 12-liter flask with 5 liters of ordinary water and let it stand over night.
- (3) Dissolve the sodium carbonate and bicarbonate in 5 liters of cold water.
- (4) Pour No. 3 into flask containing No. 2, shake vigorously for a minute, and let stand to permit the calcium carbonate to precipitate.
- (5) After half an hour siphon the clear liquid and filter through two layers of paper to obtain a perfectly limpid product. This must be kept protected from the light.*

The antiseptic solution is then ready for surgical use; it is practically isotonic with blood serum. Caution: never heat the solution; if in an emergency it is necessary to triturate the chlorinated lime in a mortar, do so only with water, never with the solution of the soda salts.

Apparatus and manner of application: The vessel containing the solution is graduated in cubic centimeter, so that the amount of solution injected into the wound can be accurately measured. The neck of the container is closed with a rubber cork through which a glass thistle is passed. The bulbous portion of the thistle is filled with sterile cotton; the thistle serves the double purpose of preventing loss of chlorine from the solution and allowing sufficient atmosphere pressure to permit a free flow of the solution from the container into the tube. The projection at the bottom of the container, to which the tube is fastened which carries the solution into the distributor, is a continuation of the bottom of the container itself and allows complete drainage from the bottle. Rubber tubing one centimeter outside diameter, carries the solution from the container to the distributor. A

glass drip, the lumen of which is six millimeters in diameter, is inserted in the main tube between the outlet of the container and the distributor. This drip indicates the rate and amount of solution flowing from the container. The glass distributors are made so that the inlet can easily be slipped into the rubber tubing from the container. These distributors are made in multiples, having one to five outlets to which the Carrel tubes are attached. The outlets from the distributors should be made so as to allow the easy attachment of the Carrel tubes. The Carrel rubber tubes are approximately fifteen to twenty-five centimeters long, having a diameter of five millimeters, the inside lumen of which is three millimeters, giving a one-millimeter wall for the tube. They should be made of pure rubber so that the end of the tube can easily be tied with either Pagenstecher linen or strong silk. Rubber tubing containing fabric or catheters will not suffice because of the difficulty in closing the end and the destructive action of the hypochlorite solution on the fabric.

Beginning from the distal end, a series of small holes, approximately one-half millimeter in diameter, are pierced at intervals of one-half centimeter; six, eight, ten, or twelve perforations are usually sufficient, and are made with a specially designed punch. Both sides of the tube are pierced with one punch; the tube is then turned on its axis to a right angle and the process alternately repeated, thus staggering the perforations. Extreme care must be exercised to remove the rubber plugs made by the punch so there will be no obstruction to the flow of solution. These plugs can readily be removed by stretching the rubber. The number of tubes to be used must be decided by the size and depth of the wound. They should be inserted so that all parts of the wound are constantly bathed with the solution. To prevent the tubes from "bunching" in the wound, strips of gauze are loosely inserted between them. The gauze serves the double purpose of keeping the tubes in situ and retaining the solution. Gauze should never be packed tightly in the wound. A gauze compress is gently placed over the tubes and the dressing completed by covering with Turkish toweling. The dressing is fixed with a bandage, care being taken not to constrict the tubes, but fixing them to prevent displacement.

The bleaching properties of the hypochlorite rapidly destroy the cotton fabrics. In severe cases a large pad of non-absorbent cotton which completely envelops the extremities may be used. Non-absorbent cotton is used to prevent absorption of the Dakin solution from the wound.

For superficial wounds, the Carrel tubes

*For a more complete description of the technic of preparing Dakin's solution for surgical use, tests for determination of the chlorine content, and other general information upon this subject, see article by Carrel, *Journal of the American Medical Association*, December 9, 1916.

are covered with Turkish toweling, extending from the distal end to a point just beyond the proximal perforation. These tubes remain in position without slipping over the tissues and keep the wound areas sufficiently bathed. Strips of gauze should then be placed between the Turkish toweling tubes; this tends to keep them in position and also retains the solution.

The graduated container should be elevated not more than three feet above the patient. A stop cock is placed distal to the outlet of the container. The solution should be allowed to flow into the wound by releasing the stop cock, allowing just sufficient solution to enter the wound to fill it and not overflow. The wounds are "laked" or "puddled" with the solution. Where pain is experienced, the container should be lowered; pain is due either to pressure or the causticity of the solution. Emphasis must be laid upon the fact that the most effective method is the intermittent instillation every two hours, day and night, and not constant irrigation.

Re-dressing: The wounds should be re-dressed daily, every aseptic precaution should be scrupulously exercised. The hands should at no time come into contact with the wound; the entire dressing being completed with either tissue forceps or hemostats. Reinfection of a sterilized wound can easily be caused by errors of technic. The edges of the wound are protected with gauze saturated with vaseline. The gauze is prepared by immersing suitable lengths of No. 4 bandage gauze in yellow, liquid vaseline, which is sterilized and allowed to cool before using. By following this process, the vaseline gauze is easily applied. The skin surrounding the wound should be thoroughly cleansed with ether which dissolves the vaseline. This is followed by sponging with cotton, using a neutral sodium oleate which is non-irritating, then sponging with Dakin's solution. The sponging process removes the wound secretion, necrotic tissue, and other debris.

The Carrel tubes are introduced into the wound, the ends attached to the distributors and the dressing completed as described. In emergency cases, dressings can be delayed two or three days, providing the instillation of the solution is continued. It is absolutely necessary that a free incision be made to permit easy introduction of the tubes and gauze into the wound.

Advantages: It has been demonstrated that the great majority of wounds can be closed by suture and without suppuration. The period of convalescence is greatly shortened, and many patients leave the hospital in four to six weeks who would have required treatment from three to six months under former methods. All complications, such as atrophies,

ankylosis, adhesions, septicemia and amputations are minimized; the mortality rate is also greatly reduced. Chutro makes the startling statement that he is now doing one amputation for sepsis and hemorrhage where formerly twenty were necessary, and there is but one death where formerly there were ten. Many cases labeled "amputate on arrival" at the front have been saved from amputation by Chutro.

The major portion of the foregoing information regarding the preparation of the Dakin's solution, description of the Carrel apparatus, method of application, etc., has been copied almost verbatim from the admirable paper by Sherman published in *Surgery, Gynecology and Obstetrics*, for March, 1917, to whom it is desired full credit be extended. Sherman concludes:

(1) Infection can be aborted if the treatment is begun within the first twenty-four hours:

(2) Suppuration, when well established, can be controlled if the focus can be reached:

(3) The success of the treatment is dependent upon the perfection of the Carrel technic and the acceptance of all the details:

(4) The effect of Dakin's solution is entirely local, there being no danger of toxemia from absorption, regardless of the amount used:

(5) Carrel's technic, using Dakin's solution, is a specific against infection of wounds.

According to a recent press dispatch (March 28th, 1917), a hospital for the instruction of surgeons in this country in the treatment of infected wounds by the Carrel-Dakin method, will be immediately established on the grounds of the Rockefeller Institute for medical Research. It is anticipated that Carrel will be granted leave of absence to return to this country and assume personal supervision of the work. The Rockefeller Foundation is said to have contributed \$200,000.00 for the purpose of instructing American surgeons in the Carrel-Dakin treatment.

In closing it is only fair to give the opinion of Delbet, who claims that by the application of Dakin's solution in uninfected wounds, treated a few hours after their infliction, only two out of nine in which no bacteria had been discovered before treatment, remained aseptic. In seven cases bacteria appeared in the wound after two or three days of intermittent irrigation with hypochlorite solution. He states that "if free exposure is necessary, the hypochlorite does not sterilize." It is, moreover, unreasonable to believe that Dakin's fluid has an antiseptic action, since in the cases described the gauze employed to maintain contact of the "germicide" with the wound was richer in microbes than the exudate itself. "Hypochlorites act on the al-

bunin molecule in such a way as to render it more susceptible to attack by microbes." Delbet is convinced that simple mechanical cleansing of the wound, excision of the orifices, or preferably the whole surface of fresh wounds, followed by immediate union, is capable of producing healing by first intention without the help of any antiseptic.

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RHEUMATISM FROM THE MODERN VIEWPOINT.*

By SIDNEY J. MEYERS, Louisville.

At the outset it must be confessed that the term rheumatism, which for hundreds of years has been almost universally employed to indicate pain of greater or lesser severity with or without other manifestations, involving various anatomic structures, is of uncertain origin and is literally a misnomer, i.e., it is merely a meaningless word having no etiologic nor pathologic significance. And it may be interesting to observe that medical nomenclature contains many other equally absurd terms copied without rhyme or reason from the writings of the Fathers in medicine of remote antiquity, when the body was presumed to consist of four "humors," viz: (a) blood, (2) phlegm, (c) black bile, and (d) yellow bile, and that harmful phlegm gravitating from the brain was the cause of painful lesions in various portions of the human economy.

Even in the present more modern era, despite the tremendous advancing strides toward the aeme of perfection which have oc-

curred in every department of scientific endeavor, the marked improvements which have been made in etiologic, pathologic and bacteriologic investigations, the multiplicity of new diagnostic methods made possible by the employment of pathologic tests and instruments of mechanical precision, the clinical symptom-complex familiarly known as rheumatism still defies adequate description, the exact etiology remains unknown, the pathology is an uncertain quantity, and accuracy in diagnosis oftentimes unattainable.

Pain of varying severity is one of the most common accompanying symptoms of many of the physical ills to which human flesh is heir, and were it possible to clinically differentiate and identify the various types commonly diagnosed as rheumatism and presumably produced by the irritative or inflammatory action of bacterial or chemical substances within the systemic circulation, it might be possible for the clinician to make the following classification: (1) myalgia, or pain in the muscle, tendon or fascia; (2) myositis, inflammation of the muscular tissue; (3) neuralgia, pain in the nerve; (4) neuritis, inflammation of nerve tissue; (5) chondralgia, pain in the cartilage; (6) chondritis, inflammation of the cartilaginous structure; (7) ostalgia, pain in the bone; (8) ostitis, inflammation of the bony structure; (9) arthralgia, pain in the joint; (10) arthritis, inflammation of the joint structures; (11) osteochondralgia, pain in both the bone and cartilage; (12) osteochondritis, inflammation of the bony and cartilaginous structures; (13) arthrochondralgia, pain in the bone and cartilage of the joint; (14) arthrochondritis, inflammation of the bony and cartilaginous structures of the joint.

It is unfortunate that clinically distinctions such as those suggested are impossible by any known method of investigation, and the diagnosis of "rheumatism" includes all the foregoing lesions as well as a multitude of others. The term rheumatism, when used to represent painful affections of the throat, the cardiac apparatus, the skin, the eyes, the intestine, the lung and other viscera, seems the height of absurdity; and it naturally follows that rheumatic and rheumatoid* wherever and however employed must be equally uncertain in their significance; hence rheumatic gout, bronchitis, tonsillitis, iritis, keratitis, neuritis, phthisis, urethritis; also rheumatic anesthesia, apoplexy, paralysis, purpura; rheumatoid arthritis, etc., should be eliminated from the nomenclature.

Based upon the newer conceptions of the symptom-complex known as rheumatism, it

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

*The use of any word bearing the suffix "oid" (i.e., like, or having a resemblance to a certain type of pathology) seems without justification. All such terms should be discarded by those making any serious pretense to scientific attainment.

would seem advisable to disregard previous classifications and divide the cases into two groups: (1) infectious, and (2) non-infectious.

The first group should embrace all lesions presumed to owe their origin to bacterial invasion, regardless of the point of entry of the infection or character of the invading organisms. Obviously this group will be composed principally of the cases heretofore described as infective arthritis or polyarthritis according to whether the joint lesions are single or multiple, the so-called rheumatoid arthritis, painful, swollen, deformed joints, etc.

In connection with the infectious type, the recent experiments of Rosenow possess the greatest clinical importance and have stimulated further study of the etiology and pathology of arthritic lesions. By injecting animals with bacterial cultures derived from the blood and joints of other animals previously infected, he was able to obtain positive results in a large percentage of instances; and his contention can hardly be questioned that the infection is usually hematogenous in character, being an extension from an initial focus existing elsewhere within the body. Whether the original infective focus is located within the tonsil, the mouth, the alveolus, the colon, the prostate, the kidney, or other adjacent or distant portion of the economy, can usually be determined by painstaking clinical investigation. It must be remembered, however, that the finding of a single focus of infection does not imply that the arthritic manifestations necessarily owe their origin thereto, since multiple foci may exist. Failure to appreciate this fact has been the cause of much adverse criticism of the theory of focal infection, inasmuch as removal of the supposed focus was unproductive of the expected relief. And while I am a firm believer in the idea of focal infection, the commentary may be permitted that its application has been too widely extended during the last year by those whose enthusiasm overcame their better judgment, which resulted in the unnecessary sacrifice of hundreds of teeth and tonsils the presumed sites of infective foci without the production of the anticipated beneficial effect upon the health of the patient. In many instances, however, the most brilliant results have been secured by removal of the known infective foci followed by reconstructive, eliminative and supportive treatment.

The second group should embrace all types supposed to be due to retention or non-elimination from the system of deleterious products resulting from disordered or perverted metabolism, known principally as the so-called muscular rheumatism, sciatica, migratory rheumatism, rheumatic neuritis, etc. It is this type which is responsible for the uric

acid theory of Bouchard, Haig, and others, as the cause of the joint and muscular pains. Over fifty years ago joint lesions were thought by some clinicians to be due to a "vitiated condition of the circulating fluid." By inductive reasoning it was presumed that some morbid material was generated within the bodies of those in whom "rheumatism" had fully developed, and that it was not absorbed from without. It was claimed by most authors that "rheumatism" was a blood disease, that the circulating fluid carried with it a poisonous matter which by virtue of some mutual or elective affinity fell upon the fibrous tissues in particular, visiting and quitting them with a variability that resembled caprice, but ruled no doubt by definite laws as yet unknown. "Whatever, therefore, the poison may be which induces the "rheumatic state," it is one which appears to be generated within the system as the result of faulty metamorphosis."

The idea that failure of uric acid elimination in many instances probably acts as the primary causative factor in the production of arthralgia, myalgia, etc., is mentioned in this paper to emphasize its importance. While in some cases urinalysis may fail to reveal the presence of uric acid, if a specimen of the blood be subjected to careful examination uric acid and nitrogenous elements in abundance will be found. This is especially true in myalgia, and also in arthralgia without material swelling or joint deformity. If the patient be placed for a few days upon the proper dietary regime, with the administration of suitable medicaments and eliminative drugs, it will be found that the uric acid disappears from the blood and is abundantly excreted with the urine.

It is believed that the kidney deserves especial consideration in its relationship to the production of myalgia and arthralgia. Even slight disturbance of renal function may prevent elimination of deleterious products resulting from metabolic errors, and thus be a prolific cause of the symptom-complex clinically called rheumatism.

Cabot says that in his experience rheumatism has sometimes turned out to mean aortic aneurysm, pleural carcinoma, tabes dorsalis, osteomyelitis, spondylitis deformans, bone tuberculosis, syphilitic periostitis, lead poisoning, morphine habit, alcoholic neuritis, trichiniasis, and Neisserian infection. "Rheumatism is one of the most dangerous of all diagnoses to the conscientious physician." To insure accuracy in diagnosis the clinician must depend to some extent upon physiological, bacteriological, bio-chemical and mechanical methods of investigation. The clinical symptomatology is sometimes misleading; careful anamnesis affords information of considerable

value from the standpoint of differential diagnosis.

From the modern viewpoint there is little to be said with reference to treatment. While phylacogen and vaccine therapy is still in the experimental stage, the method seems theoretically ideal especially in the infectious type. In actual application, however the results have in some instances been clinically rather disappointing. Where a known infective focus can be demonstrated, its removal should be promptly accomplished.

In the non-infectious type, the beneficial effects of dietary regulation and thorough elimination by the internal administration of proper medicaments are too well understood to require further comment. The salicylates, colchicum, sodium bicarbonate, mineral waters, etc., are useful, and hydrotherapy may sometimes be used with benefit.

DISCUSSION.

B. J. O'Connor, Louisville: I do not think such a splendid paper should go undiscussed by this Association. The points particularly that the doctor has emphasized have been those along the line of diagnosis.

One point I would like particularly to stress is the fact that in all infectious types of rheumatism there is elevation of temperature, and I know no means of diagnosis so important as the use of the thermometer. A Wassermann likewise gives us another valuable index, and, furthermore, the X-ray is an invaluable means of diagnosis. The numerous pains, myalgic and otherwise, are frequent, due in many instances to the constant strain of certain groups of muscles, and these are oftentimes overlooked as the source of the trouble.

One particular point I would like to emphasize, which was forcibly brought out by the late Dr. Murphy, is the fact that when you get joint involvement preceded by a chill, you have a surgical rather than a medical condition to deal with.

C. W. Dowden, Louisville: This is certainly a most excellent paper, and I am glad that Dr. Meyers made the classification he has into the infectious and non-infectious. I really believe it is the only true classification we can make of rheumatism at this time. The infectious type undoubtedly comes from a focus of infection at some point and it should be removed. The non-infectious type, which I think forms a great number, possibly the majority of cases, does not come from a focus of infection. I think I can illustrate that point best by telling you a little incident that happened during the year.

In reading a paper on this subject before the Kentucky Midland Medical Society of Kentucky I was fortunate enough to have in the audience probably the oldest practitioner in the State of Kentucky, who was impressed with the non-infectious theory of rheumatism. He had been

practicing medicine for over fifty years and did not believe in the focal infection proposition. In discussing my paper he cited a case which impressed me very much. He told us of an old colored man whose only duty was to shovel coal into a hot furnace. He got along all right until the cold weather came. He would take off his shirt when he got hot, and when he went out into the cold he got a chill and his joints would swell and become sore. This doctor was called. He did not have salicylate of soda and salicylic acid at this time, but used cotton swaths, red flannel, and colchicum. These were applied and the patient stayed in bed about two weeks with each attack. This went on until finally salicylic acid was discovered. This old doctor, who only went to see the patient once a week, left 24 of these powders to be given in ten grains every four hours. The wife of the old colored man misunderstood the doctor's directions, and instead of giving him one powder every four hours, she gave him four powders every hour until they were all gone, so that the patient got half an ounce of salicylic acid in six hours. The doctor was called back the following day, but could not get there until the second day and then he found the old gentleman at work feeling fine. (Laughter). The powders had cured him of his trouble. The doctor said he did not have his tonsils taken out; he did not have arthritis; he did not have streptococcus infection; he did not have this and that we now hear so much about; he did not even have rheumatism, but he had the "rheumatiz" and he got well. He did not have any more trouble. The salicylic acid and sweating cured him.

That was the non-infectious type of rheumatism depending upon the retention of uric acid in the blood. I have investigated any number of cases of this type who, after having their tonsils removed, have gotten no better, and I have found by a close and careful study of the blood that there has been an abundance of uric acid; by the old treatment of purging and sweating, prescribing a diet free from purins thus reducing the uric acid in the blood to normal, these patients have got well. Something like 20 cases of this kind have come under my observation in the last year. Understand, I am not speaking disparagingly of focal infection; I believe a comparatively small percentage of these acute cases are due to foci of infection. In the other cases however, it is wrong to subject the patients to the operation of tonsillectomy or of having the teeth extracted. I recall a man who had every tooth in his head extracted for an acute joint condition, and there was not a bad tooth in his head. His condition depended upon a severe metabolic disturbance.

B. A. Caudle, Hopkinsville: I do not know that I can add anything of interest to this discussion. The doctor has given us a splendid paper, and I do think that internal medicine has been much neglected at this meeting. I want to discuss rheumatism a little because I am a rheu-

matic myself. I believe the majority of cases of rheumatism are due to focal infection. However, I know of some cases in which absolutely no focus of infection could be discovered. I have now under treatment one of the worst rheumatics I have ever known or seen, a strong, stalwart man, so crippled up that he cannot feed himself; he cannot dress or undress. He has had his tonsils removed, or examined rather, and nothing was found the matter with them. We had a Wassermann made and that was negative. He has never had gonorrhea. There is no trouble with the gall-bladder or with the appendix. There is no focus of infection anywhere unless it be in the alimentary tract. We gave him purgatives; we gave him phylacogen; we gave him salicylates. We have had his teeth X-rayed and they show no disease or abscesses. I gave him 20 doses of phylacogen and it did no good. He has been to Hot Springs; he came back much worse. He went to Martinsville, Indiana, three times and was not benefitted, and has to lie in his bed with nurse feeding him, and nothing has ever helped the man one bit from start to finish. No focus of infection has been found, and if in these cases the trouble is due to focal infection, to diseased tonsils, to trouble in the frontal sinuses, the gall-bladder or the appendix, why is it that the salicylates will so often relieve these patients?

I had an attack of rheumatism three or four years ago and had to lie in bed for three weeks. Every time I took a liberal dose of salicylate of soda I would get better, or I would improve by taking any of the salicylates, and if all these cases are due to focal infection, and we do not find the focus of infection, why are so many cases benefitted by the salicylates? A great many of them are benefitted by elimination with salts and diuretics, sweats, and so on. I believe there is a whole lot of things that we do not yet understand about rheumatism.

W. A. Jenkins, Louisville: Of course, we are all interested in this class of cases and we all read everything that comes out regarding focal infection. It is a very popular topic just now, in many instances, in chronic diseases, a focus of infection may be found, if a sufficiently thorough search has been carried out.

Dr. Dowden's cases and the cases mentioned by the other gentlemen in the discussion are characteristic. In some of these cases, I am sure, infection did not start the process. You get the history; there has never been any fever and never any inflammation, the patient has not been confined to bed. These patients have characteristic joint pains with limitation of motion. They come and go and finally a mild ankylosis may result in certain joints. Attacks are brought on by changes in weather, by exposure, by physical hardships and by lack of elimination.

You get crepitation on palpating the diseased joints and all together these patients suffer a great deal. By this time we now have definite pathological changes in the tendons and other

joint structures, which interfere with the blood supply of the parts, and the amount of pathology present no longer permits the condition to be spoken of as a simple one.

I am inclined to believe that a large number of these cases may be metabolic in origin; that is to say, there may be a series of retrograde metabolic manifestations which form the basis of the nutritional and trophic changes which are present in the older cases.

So I believe then, that metabolic or trophic disturbances in which even the process of enervation is deficient, is oftentimes the corner stone upon which many of these cases of so-called rheumatism is builded. At any rate, we are obliged to say concerning this class of cases, that they are post infectious at least, for we are unable to get any evidence of any infection, no matter how careful or how scientific our search, either from the clinical aspects of the case, or the laboratory findings.

Perhaps the newer work along the lines of metabolism which is now being carried on, may in the future, possibly throw some light on this now very obscure group of conditions.

Sidney J. Meyers, (Closing): I wish to thank the gentlemen for their liberal discussion, and I will say that according to the title of the paper I was not allowed much latitude except to give the modern views on rheumatism.

I want to emphasize in closing that, unlike many of the recent writers, I still believe that perverted metabolism contributes to a large proportion of our rheumatic cases. I believe, too, that focal infection plays an important part in some of these cases, but in the several cases we have had during the winter that we have worked on scientifically, looking after the excretions and secretions, and having the focal infection removed, none would have improved unless backed up by rational therapy. I am sure of that.

For the sake of accuracy, I have suggested the ill advisability of the term "rheumatism," but what are we going to do about it? I do not know but I believe the time will come when somebody will present us with a better term than rheumatism or will clinically divide these conditions symptomatically and clinically, so that we will call them something else. A great many clinicians will agree with me when I say that there are many conditions now that doctors hide under the term rheumatism, and another one is malaria, and still another is the menopause. I do not know how many women suffer from conditions at a certain time of their lives that are said to be due to the menopause.

I want to make one other point, and it was referred to by Dr. Dowden. In his paper on urinalysis he showed that in many of these metabolic processes the urine is no indicator, but it is the blood, and when the urine is clear and the clinical symptoms are manifested, the blood is surcharged; that just as soon as you begin the treatment scientifically the overcharge of the

blood is lessened, or the urine becomes overcharged.

Several gentlemen have asked why do patients with disturbed metabolic processes do well under salicylate of soda? This does not emanate from my mind but from the minds of others who claim that even rheumatism can be cured by the administration of salicylates when due to focal infection, and that the focal infection is in the urine and the salicylates given in any one form or another act by disinfecting and clearing the colon of the focal infection.

TUBERCULOUS MENINGITIS.*

By J. ROWAN MORRISON, Louisville.

Tuberculous meningitis is always secondary to tuberculosis elsewhere, although the primary focus may be in close proximity to the meninges and the disease extend directly to them through the connecting lymph channels e.g., extension from the nasal cavity, the bones of the skull, or spine, or from the middle ear or mastoid cells. However, the infection occurs much more frequently as a part of a general miliary tuberculosis or as a metastatic process from the cervical, bronchial or abdominal lymph nodes, or from the lung or urogenital system or osseous system remote from the brain.

As regards the etiology of this trouble. In time past we have heard of many cases being caused by falls, over-excitement, etc. That trauma can have any causative effect is not apparent, unless there be an injury to a primary tubercular focus, thus causing a freeing of tubercle bacilli, e.g. injury or manipulation of a tubercular hip or breaking up with incomplete removal of tubercular glands. Statistics show that excitable and precocious children are no more liable to tuberculous meningitis than other children.

There can be no doubt that measles is an etiologic factor of no mean importance, for with this disease there is a marked enlargement of the lymphatic glands and often opening up of an old tuberculous process in them.

Whooping cough and other debilitating diseases may also cause a latent process to be awakened and secondarily transmitted to the meninges.

Children are affected in a vastly larger proportion than adults, no doubt because on account of the rapid development of the brain in the early years of life there is a great deal of work required of the meningeal blood vessels.

Any age may be affected, but very rarely have cases been observed before the third month, and after the tenth year the disease becomes much less frequent. About 70 per

cent. of cases occur between the first and fifth year of life.

In regard to the frequency of this disease. The Health Department of Louisville reports 25 to 30 deaths from this cause annually. Dr. F. S. Graves of the Pathological Department of the University of Louisville, and the Louisville Public Hospital reports in 471 autopsies held in the past two years, 23 cases of meningitis, 6 of which were tuberculous. All of these were in negroes. One in a child of eight months, one in a child eight years, one child seventeen years, and three in adults.

Sherman "Post-mortems and Morbid Anatomy" reports in 413 cases of fatal tuberculosis in children which came to autopsy, 184 or 44.5 per cent. cases of tuberculous meningitis. In 77 of these cases the disease spread from mediastinal lymph glands. In 26 from abdominal lymph glands, and in a small number from active pulmonary tuberculosis.

From a pathological standpoint the meninges are the seat of a tuberculous inflammation beginning in the walls of the smaller blood vessels, and terminating in small tubercles. These are found most abundantly at the base of the cerebrum and cerebellum, often extending along the fissures; accompanying these changes there is a fluid or semi-fluid exudate, turbid in character. The ventricles are dilated with a fluid exudate, producing an internal hydrocephalus, thus accounting for the pressure symptoms.

The symptoms are variable as in all diseases. There is no symptom absolutely pathognomonic of the disease, except the finding of tubercle bacilli in the spinal fluid—however, there are symptom complexes that taken with the history make a diagnosis probable in a great majority of cases.

We must always remember that a child living in a family one or more of whose members are tubercular, or a child or adolescent having scrofula or suspected tubercular adenitis, or one having a latent or open tubercular focus is a potential subject for tuberculous meningitis, especially if they have recently had measles or whooping cough. If, for instance, a child with such a history becomes irritable and cross, sleeps poorly and has night cries, begins to vomit, and is constipated, the physician must be on the lookout for tuberculous meningitis, especially if there be a low grade of irregular fever and slow pulse. These symptoms may be due to intestinal worms, or indigestion, or a number of conditions, but with this history and these premonitory symptoms, one should be on his guard.

If this condition does not clear up by simple measures, but instead the patient becomes apathetic, hard to arouse, develops stiffness of the neck, irregularity of the pupils, retracted abdomen, facial paralysis (oculo motor, etc.)

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

we are pretty well assured that we have a meningitis developed. Although many of the above symptoms could be present with typhoid fever or from meningism accompanying an unrecognized pneumonia, or an attack of infantile paralysis of the cerebral type.

These conditions can usually be differentiated as will be described later. If the patient has tuberculous meningitis the coma deepens, the respiration becomes irregular, often of the Cheyne-Stokes type and the case usually ends in death.

The symptoms are very similar at all ages.

I will not burden you with a detailed description of the symptoms of this disease—they are given in all modern text books on medicine; however, I wish to say something concerning certain symptoms. The temperature is no certain guide, as it may be subnormal, normal, or elevated, in fact it may be elevated at any stage or in any form of the disease, although it is usually more irregularly elevated than in other forms of meningitis.

The pulse is almost always retarded—frequently showing a jerking, racing character when the patient moves. However, there is nothing absolutely pathognomic about the pulse.

Vomiting is by no means always projectile, nor does projectile vomiting necessarily mean cerebral or meningeal irritation. On the other hand it frequently occurs in gastric diseases.

The “*taches cerebrales*” does not necessarily indicate meningitis, but rather vasomotor disturbances.

Kernig’s sign is present at some time in almost all cases of tuberculous meningitis as it is in other forms of meningitis.

The Babinski and Oppenheim reflexes are of importance if elicited, but are often not found and are present in tetany and other cerebral conditions. An absolute diagnosis of this condition is very difficult in many instances. Lumbar puncture and an intelligent examination of the spinal fluid offers us the best means in all cases and should be done in all cases where it is necessary to clear up a diagnosis.

In tuberculous meningitis the spinal fluid is clear and increased in amount. The albumin and globulin are both increased in amount, and there is a fair reduction of Fehling’s solution. The cellular elements are always increased and the mononuclear lymphocytes largely predominate. If allowed to stand for sometime a fine cobweb coagulum settles in the bottom of the tube. This is very indicative of tuberculous meningitis, but to be absolutely sure tubercle bacilli must be recovered from this fluid. This is often difficult, but repeated examinations and if needed animal in-

oculations usually demonstrates their presence if the case be really one of tuberculous meningitis.

The skin reaction to tuberculin may be present in some early cases, but it is generally absent by the time the ordinary case presents.

Tuberculous meningitis must be differentiated from,

1. Other types of meningitis, especially cerebro-spinal.
2. Pneumonia with meningeal symptoms.
3. Typhoid fever.
4. Later cases of poliomyelitis with cerebral symptoms.

Cerebro-spinal or epidemic meningitis is rapid in its onset, as against the usual slow development of tuberculous meningitis. The temperature is higher and more regular. History of epidemic as against tuberculosis. Examination of spinal fluid—epidemic almost always cloudy, polymorphonuclear leucocytes predominate. Meningococcus found.

In other types of purulent meningitis the bacteria causing it can be isolated.

In meningism accompanying pneumonia or other toxic conditions, the spinal fluid is increased in amount and otherwise normal.

In pneumonia examination shows a disturbed pulse-respiration ratio, and physical signs in chest if examination is carefully made.

Typhoid fever presents many symptoms of this condition in the less advanced stage. In typhoid, however, the abdomen is frequently distended, while here we usually have a retracted abdomen.

In typhoid we have a Widal reaction or typhoid bacilli in the blood. A careful examination of the spinal fluid will clear up the diagnosis.

Poliomyelitis presenting cerebral symptoms often resembles this trouble very much, and the diagnosis can only be made by examination of the spinal fluid, both cystologically and bacteriologically. The spinal fluid in both conditions is increased in both, but with tuberculous meningitis it is greater. The cellular content is also greater in tuberculous meningitis. In both the lymphocytes predominate. If tubercle bacilli are found, the diagnosis is made.

The Journal A. M. A., Sept. 16, 1916, abstracts some very interesting articles from “*Archives de Medicine des Enfants, Paris*,” These articles concern diseases of the meninges and brain.

Here Suner states “There is no certain sign of tuberculous meningitis except discovery of the tubercle bacilli in the spinal fluid, and this is a difficult matter as they are always scanty.” He is sure that many mistakes are made in the diagnosis of this disease and thinks that some of the so-called cured cases have been infantile paralysis.

We read from Guinon and Pouzin that "with a meningitis, even with malformed cells and lymphocytosis, if we cannot find the tubercle bacillus we are justified in reserving the prognosis of a spontaneous recovery." They cite cases to corroborate this.

The prognosis generally is extremely bad, practically all cases die. Cases have been reported where the patient recovered even when the tubercle bacilli had been found in the spinal fluid.

Elsner in *Monographic Medicine*, Volume VI, says he has never seen a recovery but reports two authentic cases that he knew of.

Pitfield reports 29 cases from medical literature which had recovered. In 10 of these subsequent necropsies confirmed the diagnosis and in 18 tubercle bacilli were found in the spinal fluid.

McCarthy in reports from The Phipps Institute states that he frequently found evidences of healed tuberculosis of the nervous system in persons who ultimately died of pulmonary tuberculosis.

However, the recoveries from this dread malady must be very few indeed.

No form of treatment appears to be at all curative, and all we can do is to apply our skill in making the patient as comfortable as possible. This is frequently accomplished by the administration of some form of opium or the bromides and alcohol.

Warm packs are often sedative to the patient, and should be applied if they cause any relief.

Lumbar puncture relieves tension and affords relief if there is over-tension with convulsions, otherwise it is not considered a therapeutic measure of value.

Concerning the prophylaxis of tuberculous meningitis, Jeanneret in *Archives de Medicine des Enfants*, July, 1916, insists on the necessity for impressing on every pregnant woman where there is a case of "open" tuberculosis in the immediate family that the coming child must be separated at once and kept entirely away from contact with the tuberculous parent or other relative. Any furtive kiss or brief visit compromises the success of the sacrifice. As soon as the child has passed the period when generalization of tuberculous infection is most menacing, that is, when it reaches its eighteenth or twentieth month, it can be restored to the family. The risk for the child is comparatively small by that time. As it is a question of life or death for the infant, the transient separation can generally be arranged when the parents have the matter presented to them in the right light.

He thinks it would be ideal to have institutions where such children could be taken care of. He states that in Switzerland several such institutions have already been started.

That tuberculosis is transmitted to the newly born by those having open tuberculosis of the lungs is clearly shown by an instance related in Pfaudler and Sclossman, *Diseases of Children*, 1908, Vol. IV.

"Dr. Hubert Reich (the district physician of Muhlheim) in 1878 reported a very remarkable series of cases in early infancy. He saw ten infants of healthy families die of tuberculous meningitis within fourteen months. The cases occurred in the practice of a midwife who had severe phthisis, and who was accustomed to inspire air from mouth to mouth in cases of asphyxia, and to frequently kiss upon the mouth all the children at whose births she assisted. One child died at the age of two and a half months, seven between three and four months, one at nine and one at six months."

DISCUSSION.

W. F. Boggess, Louisville: Dr. Morrison's paper does not leave very much for discussion as he covers the subject perfectly as far as we know. The principal thing I would mention is just as he emphasized, and that is, the great difficulty in making a diagnosis of tubercular meningitis. It is almost impossible to differentiate it from any other type of meningitis. If I see a case of tubercular meningitis, and I see them quite frequently, and the child dozes, as it usually does, I insist that my diagnosis is correct from the clinical symptoms, but if the child gets well, I change my diagnosis, as happens frequently. It was not a child that got well of tubercular meningitis, but simply it had a meningitis that was not tubercular in character. I think many of these cases of tubercular meningitis are so slow in their development, even of marked meningeal symptoms, that they are oftentimes overlooked entirely until the child shows the characteristic symptoms of advanced meningeal inflammation. I have seen case after case of tubercular meningitis in a child treated for two or three weeks for typhoid fever, and I think there are not many cases of the slower types of tubercular meningitis that are not diagnosed and treated as typhoid fever by the general practitioner. You cannot make a diagnosis from the temperature chart; you cannot make it from any of the symptoms, the clinical symptoms, until you get marked symptoms of meningeal irritation, then you cannot say positively unless you find tubercle bacilli in the spinal fluid. But you can be positively sure of your diagnosis if the meningitis occurs in a tubercular family.

I think I have seen a number of cases of tubercular meningitis die showing practically no fever. There is a certain type of tubercular meningitis of slow origin, where even a subnormal temperature is present. I have seen two or three such cases. I remember a few years ago I saw a case with Dr. Barbour of that type. It was a

true tubercular meningitis, and that child showed no fever at all.

So far as treatment is concerned, there is nothing to offer. It is a disease about which very little can be said other than the diagnosis.

O. Miller, Louisville: There are a number of cases on record where the tubercle bacillus has been found in the spinal fluid and the patients have been reported well, but they were not cured and perhaps will not be. A number of the cases that have been investigated have not proved fatal. This may be due to a localized process in the meninges.

When Dr. Morrison spoke of prophylaxis in these cases, that is, removal of the infant at birth from tuberculous parents who have open cases of the disease, it not only applies to the prophylaxis of tubercular meningitis but to the more common occurrence of pulmonary tuberculosis. Virtually, nearly all cases that comes to the sanatorium for treatment will give a history of parental infection or else a definite history of contact. If we stamp out tuberculosis it will be through this method of isolating the infants from tuberculous patients. Whether that will come from the establishment of institutions or not is a question, but it should come from instructing the parents in regard to prophylaxis, and if an infant cannot be removed from the immediate precincts of the family, it should be isolated in some home. The parents should be taught proper prophylaxis, and that infection takes place by contact with the child. If proper care is taken of the sputum, of the cough, there is not so much likelihood of spreading infection. The parents should be taught that infection takes place from drop infection where the mouth is not covered, that is, a fine spray is thrown out and the organisms may remain suspended in the atmosphere in a closed room for a number of years. If the child is properly taken care of it can live in the same home with relative safety.

Prostatic Enlargement.—Lissauer reviews 158 articles that have been published on the subject of hypertrophy of the prostate in recent years. The clinical picture with atrophy of the prostate seems to be practically the same as with hypertrophy. Malignant degeneration of the prostate may also induce the same set of symptoms; the frequency of cancer in the prostate is an additional argument in favor of operative treatment when there are symptoms from the prostatic changes. Albarran found malignancy in fourteen of 100 cases of hypertrophy of the prostate; Kummel nine times in forty-one cases; Burkhardt eight times in 172, and Steiner twelve times in ninety-six cases. Salinger even goes so far as to assert that in every case of enlargement of the prostate in the elderly, the possibility of cancer should always be considered.

THEN AND NOW.*

By BEN P. EARLE, Dawson.

CONDITIONS FIFTY YEARS AGO AND IN THE CHANGING PRESENT.

The paper here presented was given before the Hopkins County Medical Society and is repeated by request with the hope that it will contain entertainment and perhaps instruction for those of the younger generation whose memories do not span the past half-century of improvement, progress, and change. The conditions that here refer to one county were common to all the counties of Kentucky and throughout the nation. It is well to pause at intervals and look backward at our footprints on the sands of time.

In Hopkins county, fifty years ago, there was no Earlington, Morton's Gap, Nortonsville, Mannington, White Plains, St. Charles, Hanson or Dawson Springs. Dalton consisted of one small store, church building, schoolhouse, and blacksmith shop. The only towns in the county were Madisonville, Nebo, Charleston, with a few small stores about over the county.

We had not more than half the public roads we have to-day and they were maintained on the old "hand system." They were very poorly worked. One third of them were so narrow that when two vehicles met one would have to sidetrack and stop while the other passed by. I doubt very much if there were as many as 150 carriages, buggies, or other pleasure vehicles in the entire county, and of course such a thing as a rubber tire had never been dreamed of. There were no railroads. Mails were conveyed through from town to town on horseback or by hack.

Mail service consisted of not more than a half dozen postoffices and there was but little mail matter. In 1869 when I located in Charleston, we received our mail from the Madisonville office, fourteen miles away. The people around Charleston had an understanding with the postmaster and among themselves that any one of us who happened to be in town would bring out the mail for the neighborhood. By this means we got mail about once a week. Then, if we saw a newspaper that was not more than a week old, we had fresh news. Now, we want a morning and an evening paper. At this time there was received for the whole Charleston district perhaps as much mail matter as now comes to my home. A man then who was a subscriber for a weekly or a monthly newspaper was looked up to as a superior person, and the doctor who "took a medical journal", why, he was expected to be about equal to the doctor who

*Read before the Kentucky State Medical Association, Hopkinsville, October 24-27, 1916.

now takes a post graduate course. There was no effort whatever toward having a medical society.

The status of physician's instruments and libraries may be inferred from the fact that in 1868, Drs. Dempsey, E. G. Davis and Pritchett amputated the forearm near the wrist and were therefore regarded as the leading physicians of the county. After getting all their instruments together, to perform this, then unusual, operation, they found it necessary to borrow some instruments from other doctors. There wasn't a hypodermic syringe in the county, in fact, but few, if any of the doctors would have known what he had found if he had picked one up. I attended my first course of lectures in 1868 and 1869 at the University of Louisville and out of the 230 matriculates, not ten had ever seen one. No one had ever heard of a fever thermometer, and when the first ones were sent out they did not "self-register," so, when you used one, you had to look quickly for the mercury would begin to fall as soon as you removed it from the patient. There was not a microscope in the county. Stethoscopes were a curiosity. The only drug stores in the county were three in Madisonville, and the entire stock of these three would not equal one ordinary drug store in a small town. The doctors all kept their own medicines and wrote very few prescriptions.

There were no telephones or telegraphs. All calls were by courier, either on foot or on horseback. And it was not at all uncommon for a doctor to receive a call and postpone answering it until the next day. During what he called the "sickly season," from July to December, it was not at all uncommon for a doctor to be 24 hours behind with his calls, in fact, many of us had to do our work by neighborhoods, so that when we started in the morning we would do one section and pass into another, and if we received a call back to the first section, we had to wait until we could finish up in other places and get around again. It was no uncommon sight to see two or more couriers keeping up with the doctors, until he could reach their sick people. I remember on one Sunday afternoon after having ridden 40 miles with several calls yet to make, I found, on arriving at home, two young men awaiting me with a call to go to see a lady ten miles away who they said was very ill, sick unto death. They had been waiting at my house for several hours. I had to tell them it would be at least 24 hours, if no other work accumulated, before I could reach her. So they left with my promise that I would be there as soon as possible. Just imagine, if you can, people waiting for a day or more for a doctor to get around. Now if you can't come right away,

they call another and another, until one is found who can come, and come in automobile style.

Our means of diagnosis, then, consisted often of a poor history of the case, the pulse, the tongue, poorly done auscultation, and percussion, just a sort of general inspection. Now we have the X-ray, not only to show that we have a fracture, but the exact nature and extent of the fracture; not only the presence of a foreign body, but its exact location and character. We no longer have to depend on the inspection for anemia. We have the blood count; no longer the resistance of the arteries, we now figure the blood pressure. These and many other things enable us to form a more correct diagnosis. We no longer grope in darkness as to tuberculosis, typhoid, pneumonia, malaria, as to whether there are worms or not, we have the positive means of finding out. Then we were in happy ignorance of the "germ theory." Now we have only to catch the specific germ and administer the specific dose that is his special poison.

Then no requirements were exacted of the prospective medical student, anybody who had the price of tuition could enter. Now one must have not only a high school diploma, but must have two years college work. Then two terms of four or five months each was all that was required for graduation. Now it takes five years of seven months each. And after graduation, one is still required to pass a rigid examination before a State Board, before being allowed to practice. Then one could enter the practice without ever attending medical school at all. While the matter was then too lax, it is a question, if the pendulum is not swinging too far the other way.

I was taught then that to wound the peritoneum was almost certain death. Now the peritoneum is cut at any desired point, repaired, and all is well. Almost every part of the anatomy is operated upon now with good results following. Our professor on surgery spent an hour then in teaching us the difference between sanious and laudable pus. Now we are not to have pus at all. The amount of surgery done and required to be done has increased enormously. Much of this is brought about by the increase in railroading, mining, manufactories, the use of automobiles, etc., while the knowledge of antiseptics enables the surgeon to enter the internal cavities with impunity, removing almost any part and repairing that which is left.

Then sanitariums were only to be found in the very large cities and only few there in comparison with the present. Now almost every town of two thousand inhabitants has one or more hospitals, many of them well patronized. Then there was no such thing as a board of health or health officer appointed to look out

for epidemics and use special effort and care to suppress them. Now all towns of two thousand or more inhabitants, all counties, and the states have their board duly appointed to look after this part of the community business. In many counties and towns a physician is appointed who is required to give his full time to protecting the health of the citizens. Weekly medical inspection of school children is being urged almost everywhere.

Sanitation as a science was then not thought of. Only such ideas as any individual doctor might have were taught and crudely at that. Now a strong effort is being made to have everybody taught sanitation and all means of prevention of disease in a more or less scientific way. And the consensus of opinion is that much good is being done thereby.

Trained nurses, God bless them," were not thought of fifty years ago. Such nurses as we then had were in hospitals as care-takers of the sick, and all their knowledge was gained by experience. While many of these practical nurses became quite proficient, now we have schools in every considerable town where persons wishing to enter this field are taught to do their work in a much more scientific manner. Now we feel that they are indispensable in the sick room and in all cases of both major and minor surgery.

Then we had but few men who were considered specialists and none, perhaps, who were doing special work exclusively. Now we have them, not only in the centers of population, but in almost every town and hamlet men are doing special work. All the subjects of medicine and surgery are being specialized.

Fifty years ago we had but few remedies and we had to carry our outfit in our saddlebags. Then, no matter what the diagnosis was, we gave calomel, quinine, ipecac, morphine, and rhubarb; these with a can of cantharidal ointment to blister with and whatever domestic remedies we could pick up, were the armamentarium with which we were equipped to fight disease. Then, with many doctors bragging and hectoring over their patients was resorted to. Bluffing, loud-sounding pompous talk is no longer taken for knowledge, but the physician must show by his work that he understands his business. The doctor who uses intoxicants is no longer respected. And the use of profane or uncouth language in the sick-room is no longer allowed. So far as my knowledge goes, no doctor is now ever guilty of these objectionable things. The morals of the profession are very much improved in every way. I congratulate all you younger men on belonging to a profession of which the standards are the highest, which is increasingly capable of doing the highest service to mankind, and which was forever glorified in the Master's sight in the

four words of the greatest of the Apostles, when he said, "Luke, the beloved Physician." May you all bear worthily the honors of our calling, pass on to posterity whatever is good, improve on our mistakes and overlooking any of the shortcomings of our generation, give credit to the noble pioneers of our profession who, amid such difficulties as I have tried to portray, dug deep the foundation for the enduring structure we have to-day. The work of 50 years ago was but a preparation for to-day. In looking back, remember that you, too, will look back on the wonderful inventions and improvements of the present as crude and clumsy. It is true in every generation:

"The old order changeth, yielding place to new,
And God fulfills Himself in many ways,
Lest one good custom should corrupt the world."

RADIUM TREATMENT OF CERVICAL CANCER; REPORT OF CASE.*

By L. WALLACE FRANK, Louisville.

The chairman of your program committee knowing that we had had considerable experience in the use of radium has asked that instead of reporting the case which appears on the program that we bring before you a case or two treated by radium and offer you this for discussion.

Radium is used with results nothing short of marvelous in a number of conditions, both malignant and benign. My report to-night will refer only to the treatment of inoperable uterine malignancy. However, we hope to bring before you later our results in the treatment of other conditions amenable to radium therapy.

For this discussion we would like to report one case and incidentally mention a few others which have come under our observation.

History: Mrs. M. W., age 46, white, was brought into the hospital suffering from uterine hemorrhages. She was married and had had several children. She had been perfectly well and with a normal menstrual cycle until five months ago. At that time she noticed that she was bleeding between the periods, at first irregularly and in small amounts. This has become progressively worse and she is now bleeding continuously and profusely.

For the past month she has had pain in the lower abdomen, worse on the left side. She has also had some pain radiating down the legs.

*Read before the Jefferson County Medical Society.

There are no gastro intestinal symptoms except increasing constipation.

She also has some frequency of urination but no other urinary symptoms.

Examination reveals a thin anaemic woman. Skin lemon yellow color.

General examination is negative. Vaginal examination reveals an ulcerated mass involving the whole cervix. The crater easily admits the end of a man's thumb. The mass bleeds easily when touched.

There is induration both to right and left of the uterus extending almost to the pelvic wall.

Pathologic diagnosis of small piece of tissue: Squamous-celled carcinoma.

Radium was applied in the ulcer for 30 hours. Patient remained in the hospital for five days and was discharged.

Five weeks after her treatment she reported for examination. She stated that there had been no bleeding since the radium was applied. All pains had ceased. She had a slight odorless discharge. She had gained weight; feels better and her color is decidedly improved. She is now performing part of her household duties.

A week later radium was again applied for twenty-four hours.

At present she has no mass. The cervix has entirely disappeared and there is locally no sign of malignancy. The induration which had been present has almost completely disappeared. She is apparently perfectly well.

Reviewing this case we would call your attention to the fact that this patient has been apparently relieved as she has had no return of symptoms and no demonstrable recurrence of the growth. All local manifestations of the disease have disappeared. From a woman who was bedridden, and an objection to herself and all about her she has now become able to perform her household duties and those visible signs of malignancy, namely, bleeding and the horrible foul discharge are no longer in evidence.*

The use of radium in treating these conditions is not wholly without dangers. While it is true that men may develop each a different technique in its use, yet the fact remains that only by observation in a large series of cases and the experience one thus obtains can one know what methods of application, what quantity of radium and what filtration should be used. There are dangers of injury to the bladder, and to the recto-vaginal septum which may result in the development of fistulae.

Another precautionary measure which

must be observed is with reference to the condition of the appendages as an old inflammatory condition may be so activated by the radiation that abdominal section may become necessary to relieve the acute inflammatory exacerbation.

My own training in the use of this agent was obtained in six months association with Drs. Clark and Keene of Philadelphia and during this time my observation embraced not only these cases at the time of treatment but also cases which had been treated previously. Based on these observations and our own experience we may say unequivocally that a large percentage of cases will have disappearance of symptoms both local and general.

In a comparison of operative measures as applied to carcinoma of cervix uteri and the application of radium it must be borne in mind that radical procedures are only applicable in the earlier stages. Radium may be and is used in those cases rejected as fit surgical subjects so it is seen that the field of usefulness of these therapeutic means differ very widely and they do not come in opposition one to the other.

Of the early operation of which we are ardent advocates when applicable, it must be remembered that the radical or Wertheim operation is attended by no small mortality. In Wertheim's Clinic this amounts to approximately fifteen to nineteen per cent. and in the hands of less experienced Surgeons this mortality is doubtless twenty to twenty-five per cent. Wilson quoting Wertheim's statistics states that out of four hundred and fifty cases seen, forty-six per cent. only were operable and in these the primary mortality was nineteen and one-half per cent. and the curability at the end of five years was nineteen per cent. He further states that in this country the operability of cancer of the uterus is from thirty to forty per cent. with a total curability of operated cases of ten per cent.

There is a tremendous meaning in this and considering such facts the value of radium cannot be over-estimated or over-valued. It must be borne in mind that the cases in which radium is applied are inoperable from any surgical standpoint. Can one be blamed for enthusiasm with regard to an agent that will keep alive and free from symptoms fifty per cent. of the cases which have been refused surgical relief in the very best clinics. If this were true in only twenty-five or even ten per cent. of such cases we are fully justified in its use.

We do not suggest the use of radium as a substitute for radical surgery, nor do we make any extravagant claims as to cures but we do offer its use for the control of hemorrhage, discharge and sepsis, and to relieve pain. We would further state that this

*This patient was shown to the society May 1, and all induration had disappeared and she is now apparently well with no discoverable evidence of her former disease.

remedy will in many cases bring about local disappearance of the disease and it makes no difference to us whether the word cure is used or not. We only have to say that many of these cases remain well with no evidence of disease, call this what you may.

In all fairness, we must say that not every case responds to radium therapy equally well. In fact, in about twelve to fifteen per cent. of the cases which we have observed radium seemed to have no effect whatsoever and very occasionally seemed to have accelerated the growth. Some of the cases which were very far advanced and in which we observed local cures, manifested by a disappearance of the symptoms and local condition, subsequently died of deep internal metastases, but even in these there was no return of the bleeding or discharge or local growth.

Dr. Howard Kelly reports two hundred and thirteen cases of cervical cancer treated between January 1, 1909 and January 1, 1915 of which fourteen were operable. On account of contraindications to operation four among the latter group were treated with radium alone. Two of these cases are now living and well after three years and the other two after one year. Among the one hundred and ninety-nine inoperable cases, all of which were treated with radium, fifty-three were clinically cured, one hundred and nine markedly improved and thirty-seven not improved.

Kronig reports a series of fifty-six absolutely inoperable cases of cancer of the uterus which were treated by radium, fifteen having been healed and in good health and, which is more important, these show historically no evidence whatever of cancer.

Dr Courmelles reports one hundred inoperable cases treated with radium, seventy showed gain of health for from one to four years with complete local disappearance of the growth.

Wickham, Degrais and Devall report a number of cases of cervical cancer treated with radium as still alive, without evidence of the disease, five years after treatment. They have limited the use of radium to the inoperable and border line cases.

Kronig and Doederlein believe that radiation gives a higher percentage of cures of cancer of the uterus than does the radical operation.

In conclusion we would call attention to the fact that radium also exerts a beneficial effect in myopathic hemorrhages from the uterus whether due to metritis or to fibroids. Its use is advocated and carried out by some men in the latter condition in preference to surgical procedures but this is a question which we do not at this time care to discuss,

reserving a presentation upon this subject for a future date.

In conclusion we would like to emphasize several points:

First: The relatively low operability of cancer of the cervix and the high mortality from radical operation.

Second: That radium does relieve the symptoms of pain, bleeding, discharge and sepsis.

Third: That in a certain number of cases one gets entire local healing with radium which may last for a variable length of time and in a certain number of cases this is sufficiently long to consider the case cured.

Fourth: In cases of bleeding uteri whether due to small myomata or chronic metritis radium brings about cessation of hemorrhage in over ninety-nine per cent. and disappearance of the myoma in a large percentage of cases.

THE COMPLICATIONS IN THE OPERATIVE TREATMENT OF UTERINE TUMORS.*

By J. GARLAND SHERRILL, Louisville.

There are certain conditions to be considered in every operation for hysterectomy and each operation is carried out upon some basic plan. The usual points that require attention will receive but brief mention, bearing in mind throughout their importance, such as the avoidance of sepsis, the prevention of shock, the control of hemorrhage, the protection of other viscera and avoidance of rough handling of the tissues.

Mechanical difficulties of the operation, from the great or even small size of the uterus in some cases will tax the surgeon's skill and dexterity. As a rule the larger benign (myomatous) growths are easier to remove than the smaller ones which lie deep in the pelvis. The converse is true of malignant tumors. John G. Clark says, (*Annals of Surgery*, Nov. 1916, p. 604), "There can be no more difficult surgical procedure than the radical operation for the removal of a cancerous uterus, for the efforts of the operator are impeded on all sides by insuperable limitations." Intraligamentous growths are more difficult than those which rise up from the pelvis and have a long slim pedicle. The operator should always bear in mind the fact that splitting the broad ligament is necessary to the safe and prompt enucleation of these intraligamentous growths.

In cases of extreme difficulty it may be well to remember that the operation may be very greatly simplified by bisecting the uterus.

*Read before the Jefferson County Medical Society.

One of the most frequent complications of uterine tumors is suppuration of the tubes and ovaries, a condition which markedly increases the gravity as well as the operative difficulties of such cases. The same care must be employed here to protect the abdominal cavity that is used in any infectious lesions.

In some cases of uterine tumors both benign and malignant, there may be so much pressure upon the ureters that hydronephrosis develops, with pain in the loins, enlargement in the size of the kidneys, and dilatation of the ureters. Usually this is not of serious moment, but in some cases the back pressure will seriously affect the efficiency of the kidney structure. The employment of the ureteral catheter for 24 or 36 hours before operation will materially benefit this condition.

Pregnancy occurring in the presence of a uterine tumor may become a very serious complication, not only of benign growths but also of carcinoma as well, dystocia often resulting from such a complication. We can cite an illustrative case where myofibroma the size of a child's head grew from the inferior segment of the uterus and effectively prevented the head from engaging in the superior strait, requiring a Cesarean operation and myomectomy for the relief of the patient, resulting in a successful issue. One of those recognized but somewhat rare migrating tumors of the uterus may lie in the broad ligament even to the point of losing its uterine attachment (Senn on tumors, etc.), and cause difficulty sufficient to demand Cesarean operation.

In cases of uterine cancer with marked induration of the cervix, labor may be markedly interfered with, demanding operative intervention, which may be accomplished by vaginal section in certain selected cases where, perhaps, complete hysterectomy may be impossible. Others not so far advanced, however, will demand a Cesarean section with total hysterectomy as offering the best results to the mother as well as to the child.

Most endometrial tumors are handled without great operative difficulty. Now and then one will present with a large sessile base which is quite difficult of removal by the snare. It can be enucleated by the heavy curved scissors, an incision through the cervix being perhaps necessary for access. In other cases the operative technic will be simplified by an abdominal hysterectomy. A recent author (Chas. G. Child, in March, 1917, number of *Surgery, Gynecology and Obstetrics*, p. 329), recommends abdominal morcellation for a uterine tumor. The removal of deciduous or other tissue from the uterine cavity is required occasionally and one must not overlook the possibility of puncturing

through the uterine wall in such cases with the sharp curette. Much less force is required to push through the uterine wall when its structure is softened by disease than is generally believed. The operator should use the utmost care in such manipulations to avoid this accident. Vaginal operation upon uterine tumors is done less frequently than in former years, but is occasionally resorted to. In performing this operation one must constantly bear in mind the close proximity of both bladder and rectum and take every precaution to protect against such an accident. Should the bladder or rectum be damaged immediate suture with reinforced stitch is to be employed. In opening the abdomen the bladder is often pushed up on the abdominal wall by the growth and should be avoided in making the abdominal incision. Injury to this organ has happened even in the hands of the best surgeons. If the operator is on the lookout the peculiar venous trunks of the bladder wall will warn him of its proximity.

In both vaginal and abdominal methods of approach, even in the hands of the most skilled surgeons, wounds of the ureter will occasionally occur. This accident will announce its occurrence by a flow of urine at or subsequent to the operation through the vaginal or abdominal wound. In some cases, as for instance radical hysterectomy for cancer by Wertheim's method, the ureter may be damaged by the free dissection and its nourishment impaired with resulting leak. Again the ureter may be caught in the bite of a pair of clamps which are employed to control an excessive hemorrhage, or punctured by a needle in passing a ligature, or again the ureter may be ligatured on both sides by accident. The symptoms of unilateral injury will be the escape of urine from the wound as mentioned above in the presence of urine in the bladder which is evacuated in the natural way. Ligature of both ureters, certainly and possibly that of one may result in absolute absence of the urinary secretion in the bladder. The remarkable feature in such cases is the length of time such a patient can go before a fatal issue results. Patients with double ligature of the ureter have been known to live for 15 or more days. This is perhaps, next to hemorrhage and peritonitis, one of the most serious accidents that can occur in an operation of this kind. It will probably demand a second operation upon a patient already having passed through a most trying ordeal, which is always a matter of serious moment. It is of the highest importance therefore to avoid, as carefully as possible, catching the ureters in the ligatures or injuring them either by the clamps, needle, or knife. In many cases the surgeon will find the passage of the ureteral catheter prior to

hysterectomy to be a most valuable safeguard; it only takes a few moments and does not add to the operative risk. I must confess to having this accident of double ligation to occur in one of my cases; also I have had three cases of ureteral fistula develop as the result either of injury at operation or from damage done to its nutrition in the dissection which permitted it subsequently to leak. One of my cases formed a fistula through the abdominal wall and two cases through the vagina. In the first case, which occurred a number of years ago, an anastomosis of the ureter by the method of Van Hook was attempted, but the result was disastrous. In the first case of uretero-vaginal fistula following a Wertheim operation the urinary discharge did not appear for over a week after operation. The fistula was treated by means of stick caustic and the application of bismuth paste with the most fortunate result that the discharge ceased entirely and the patient lived comfortably for over seven years, when she again consulted me for a urinary discharge from the vagina. At examination a leak was found in the upper part of the vagina near the site of the former fistula. This was found to be due to a return of the cancerous process, a cystoscopy showing that the bladder was involved by the cancerous process. The patient was very anxious that something be done for her relief, so an abdominal section was performed with the view of doing something to control the leakage, perhaps to enucleate the cancerous bladder and transplant the ureters into the intestine. A much wider involvement was found than the vaginal examination had indicated and the operation was abandoned, the patient dying in about eight weeks. The third case was developed about one week after the operation and shown by a free discharge through the wound in the vaginal wall. This patient went home and had the caustic and bismuth treatment, but showed no improvement. She subsequently returned to the infirmary and the various methods of treatment were considered, viz.:

1. The expectant method—by cauterizing the orifice of the fistula with nitrate of silver or Paquelin, followed by bismuth paste.
2. Uretero ureterostomy.
3. Uretero cystostomy.
4. The insertion of a ureteral catheter through the vesical orifice. This could not be done in this instance owing to difficulty in getting catheter through cicatricial tissue.
5. Uretero enterostomy.
6. Nephrectomy.
7. By turning a portion of the vaginal wall containing the orifice of the fistula into the bladder. An operation devised by Mackenrodt that is called entropionizing, which consists in making a small opening into the

bladder near the fistula. A circular incision is then made through the thickness of the vaginal wall around the fistulous opening, forming a small cuff which is sufficiently free to turn it into the adjacent bladder opening and to hold it there by sutures.

The first plan was abandoned because it had been tried without success.

Ureterostomy and uretero-cystostomy and uretero-enterostomy necessitated an abdominal operation, which the patient wished to avoid. Each would entail considerable risk and the chances of urinary infection and the possibility of failure narrowed the methods available to the last two mentioned above, viz., nephrectomy and transplatnation of the orifice into the bladder. We concluded that the latter method would offer the possibility of cure without in itself being a grave procedure. Moreover, we desired to retain the kidney which was performing its normal function.

Before making the operation as decided upon, we attempted to determine, first, whether the fistula was connected with the bladder or ureter; second, when we decided it was ureteral which side was affected; third, whether the kidney on that side was functioning, since it sometimes happens that cicatricial contraction results in hydronephrosis and atrophy of the kidney, and also if the other kidney was present and its condition. This latter must positively be done before nephrectomy is undertaken as a curative measure. Injection of argyrol into the bladder showed the fistula in this case to be ureteral, since the urine from the vagina remained clear. The ureter was catheterized on the sound side without much difficulty, normal urine escaping; while on the injured left side this could not be accomplished. The condition of the kidney could only be surmised by collecting the fluid escaping per vaginam, which was not satisfactory but sufficient for us to conclude that the kidney was capable of performing its function. Kelly employs the mushroom catheter for obtaining the urine from the vagina, and draws the urine from the bladder through an ordinary catheter, refraining from employing the ureteral catheter in these cases because he finds that these patients are apt to have a chill and fever develop. He also says "if there is a bad infection of the urinary tract and the opposite kidney is sound, it is a safer plan to do a nephrectomy than to try to save a seriously crippled organ, incurring the great risk involved by an operation under such conditions."

In this case the Mackenrodt method was employed. An incision was made in the vaginal mucous membrane around the sinus about one-quarter of an inch distant from the open-

ing. Another elliptical incision was made in the vaginal mucosa one-third of an inch outside of the first. The mucosa between the two incisions was removed. Through the raw surface above the fistula a short incision was made into the bladder. The bladder mucosa was sutured about the collar of mucous membrane surrounding the fistula beginning on the posterior aspect and going entirely around, making a circular suture of the stump containing the end of the sinus into the bladder wall, as a button. The cut edge of the vaginal mucous membrane in front of the sinus was joined to that behind, thus closing the opening with a second covering or reinforcement.

The result in this case was very satisfactory, although the patient had some bladder irritability for a time after healing took place.

If one discovers the injury during the operation, an effort should be made to anastomose the two ends by the method of Van Hook, or some modification of the same; or if too much tension the bladder itself can enter into the anastomosis.

Often the patient will present some other lesion in connection with the uterine tumor which will demand relief, such as gall-stone disease, hernia, appendicitis, gastric or duodenal ulcer. Most operators remove the appendix as a matter of routine, but I usually remove it only for some good reason in these cases. If gall-stones are present and the patient has had a short operation which has not affected her pulse rate the surgeon would perhaps be justified in removing the gall-stones, if his judgment told him it could be done safely; but if any doubt existed on this point a second operation subsequently is to be preferred. A skillful surgeon might do the combined operations safely where another would make a signal failure.

One of the most serious complications I have met has been a chronic gastric ulcer in a patient with a large uterine myofibroma producing discomfort from its size. A brief report of this case will probably be of interest:

Mrs. A. K., referred by Dr. Griswold on January 8, 1914. In 1912 her attendant first noticed a slight enlargement of the uterus, in which the growth was rather rapid and constant. In 1913 she began to suffer nausea and pain in the upper abdomen, with hematemeses and loss of flesh. Her gastric distress at times was great. A diagnosis was made of uterine myofibroma complicated with gastric ulcer. It was thought, however, that some of her anemia might be due to the uterine hemorrhage, which was rather free.

On January 13, 1914, after the uterine tumor was removed, an intra-abdominal ex-

amination of the stomach revealed a localized indurated mass near the pylorus, and believing that the patient's recovery from the hysterectomy would be jeopardized by the presence of a constricting ulcer of the stomach, I decided to perform gastroenterostomy. This was satisfactorily accomplished. The patient was sitting propped up in bed on the second day and made a good recovery. While this patient was under the care of Dr. Griswold, fibrolysin was injected, and the following morning symptoms simulating typhoid fever appeared. The afternoon temperature was 103 degrees F. for several days, there being the usual morning remission. A week later another injection of fibrolysin was given, followed by similar symptoms. The treatment was then discontinued. At the next examination the uterine tumor upon palpation "felt like a bunch of Malaga grapes." The patient regained her usual health after the combined operation described. She was exhibited before the meeting at which this paper was read. A radiographic plate recently made by Dr. Keith was also shown from which it could be seen that the gastro-enterostomy opening was still patent. This case goes to show what amount of surgery may be safely accomplished in some cases, however, the writer believes that two separate operations would be safer in most cases.

Occasionally a patient suffering from uterine tumor has a goiter. This condition should be dealt with separately and no attempt made to perform both operations at one sitting. This is especially true in the case of Graves' disease, in fact until the patient is relieved of the Graves' disease hysterectomy is a very serious procedure.

Phlebitis is a complication of all pelvic operations and has received much attention from surgeons. In my experience this has been one of the rarest complications or sequels of hysterectomy. I have been able to find but one such case among my records and the symptoms were but slight in this case. Many different conditions have been looked upon as causative by different observers, but I am firmly convinced that but two factors enter into the etiology of this affection in these operations, viz., injury by ligation of a large vein and infection.

At times this may prove a very trying complication. Its treatment should be carried out along well grounded surgical principles.

Before closing this subject it may be well to consider briefly the sequelae of operations of this type, among which may be mentioned (1) peritonitis; (2) meteorism; (3) suppuration of the abdominal wound; (4) cystitis; (5) ureteral and vesical fistula (previously mentioned); (6) pleurisy; (7) pneumonia;

(8) phlebitis (see above); (9) parotitis, and (10) hernia.

Peritonitis usually can be avoided by careful technique; exceptionally, however, it occurs in an otherwise simple case. A virulent pus tube may excite it. Drainage through the vagina or through the abdominal wound, Fowler position, and proctoclysis will be the most satisfactory treatment. Rarely will the abdomen have to be reopened for this condition, and if this becomes necessary it is a very serious undertaking.

Meteorism: We have not been troubled very much with this complication for some years past, having found that rapid work with complete hemostasis, brief anesthesia, coupled with thorough pre-operative preparation is sufficient to control this formerly troublesome feature. An enema is usually all that is needed if the patient is in discomfort from gas; often it may be relieved by a small catheter in the anus. Very rarely does the patient require pituitrin or eserine. If distention occurs gastric lavage relieves it promptly.

Suppuration of the incision follows the failure on the part of the surgeon to carry out a thoroughly aseptic technique. A small percentage of cases, even in the most careful hands, may show slight superficial suppuration, but with the later methods of wound preparation this has been reduced to a minimum.

Cystitis occurs from frequent and perhaps careless use of the catheter. It has been found of advantage to permit these patients to go as long as 12 hours before the catheter is used, and if possible to avoid its use entirely. There is usually only a small amount of urine excreted during the first 24 hours after an operation of this magnitude and it is well to empty the bladder only when it becomes uncomfortable. The patient will usually take care of it herself. When cystitis develops the usual treatment for this condition is employed.

Pleurisy sometimes follows exposure during prolonged operation. It can best be prevented by shortening the time of operation and keeping the patient warm.

Pneumonia sometimes develops after operation, being produced in part by the aspiration of infectious material from the throat and in part by the chilling resulting from the evaporation of the anesthetic. It is especially likely to occur where the patient is water-logged with ether. The employment of gas-oxygen-ether sequence with short anesthesia greatly lessens the occurrence of this complication.

Parotitis is a rare sequel of any surgical procedure. It is probably the result of a slug-

gish action of the parotid gland and the presence of bacteria.

Hernia follows this operation in a few cases for one reason because the size of the tumor will demand a somewhat elongated incision. To avoid this condition the operator should see that his incision is of just sufficient length to obtain easy access to the tumor and not unnecessarily long. It should be carefully approximated when the abdomen is closed, and the wound should be supported by a snug fitting adhesive binder after the dressing is applied. A patient treated in this way can be propped up in bed from the second to the fourth day and convalescence will thereby be hastened.

DISCUSSION.

J. W. Price: The question of the complications incident to the removal of uterine neoplasms is very broad, and I will simply discuss some of the most common and troublesome which have been encountered in my own work.

In uterine tumors, whether malignant or benign, complicated by diffuse pelvic peritonitis, those in which the bladder is adherent to the uterus or the tumor, those in which the tubes have become greatly enlarged and adherent to the intestinal coils, those in which all the viscera have become densely adherent in the cul de sac of Douglas, those in which the omentum is "plastered" over the tumor, the tubes, the intestine, etc.,—with such complicated pathology which is not uncommon in public hospital practice, and when in addition there exists an intraligamentous tumor with large varicose veins, the surgeon has about all he can well handle during an hour or even an hour and a half. The chief danger to the patient in an operation for complicated pathology of this kind is from injury which the operator may possibly inflict upon the intestinal peritoneum in separating the adhesions.

I recall having witnessed an operation by the late Dr. A. M. Cartledge in a case of this kind many years ago where the intestine was denuded of its peritoneum over quite an extensive area. He was a very skillful operator, and after repairing the intestinal damage the patient made a satisfactory recovery. Not infrequently there is considerable loss of the intestinal peritoneum in these complicated cases, and unless carefully repaired at the time the subsequent development of fecal fistula may be expected, which is an exceedingly troublesome although not always a serious post-operative complication.

In the treatment of malignant uterine tumors, the most serious complication to be considered is the extent to which the adjacent tissues have become involved. In many instances involvement may have become so extensive as to render the uterine tumor absolutely inoperable.

Of the post-operative complications, sepsis is the most important, but this should not occur

after operations upon uterine tumors. Several years ago marked abdominal distension quite frequently followed operations for uterine neoplasms. I now believe that in many of the cases distension was due to a low-grade infection and local peritonitis. During the last five or six years I have seen practically no abdominal distension, which may most likely be explained by greater refinement in operative technique and less intestinal traumatism. In my personal hospital work I can usually predict at the time of operation which patient will have distension and which will not. If the intestinal adhesions are extensive and there is a wide area of denuded surface to be covered, abdominal distension can be predicted because a certain amount of infection is almost sure to follow the traumatism. When the distension is mild in degree I have found it necessary to use gastric lavage as mentioned by the essayist, but have relied almost exclusively upon proctoclysis using ordinary tap water with the addition of a small quantity of bicarbonate of soda or magnesium sulphate. It has not been necessary to administer either pituitrin or eserine.

The average patient after operation is placed in bed and given about a quart of tap water, nothing more being given by rectum until the fourth, fifth or even the sixth day, when alvine evacuation is induced by an enema. I no longer give cathartics by the mouth in the post-operative care of any of these patients, as it was found this frequently caused distension; and it was commonly remarked in the wards years ago that when an enema was given the second day after operation, "that on enema day the patient's abdomen would be distended,"—this was the almost invariable rule. The giving of enemata was then gradually delayed until the third, fourth, or fifth day post-operative. Now I frequently wait until the sixth day, and in this way we have almost entirely eliminated post-operative abdominal distension.

Chas. Farmer: Among the most serious complications in surgery of the pelvic viscera is ureteral injury. I do not know that I have ever injured one of the ureters during an operation, but such an accident might happen to anyone. It is stated in text books that one ureter may be inadvertently ligated during an operation without the surgeon knowing anything about it, the kidney being later totally destroyed.

I remember having assisted Dr. L. S. McMurtry in an operation upon a patient several years ago for a large tubo-ovarian abscess complicated by extensive adhesions, and during the operative manipulations one of the ureters was accidentally divided. He practiced immediate ureterorrhaphy and inserted a cigarette drain to the point of injury. Urine was discharged through the drainage opening for two and a half weeks, after which the patient had no further trouble. As

urine from the normal kidney is sterile no peritonitis was produced.

A rather common complication following pelvic operations is the formation of adhesions. I have one patient who has given me considerable trouble in that respect. After removing a large uterine myofibroma and one Fallopian tube drainage was practiced. Within six months the patient returned complaining of severe abdominal pain. A second operation disclosed numerous visceral adhesions which were separated. The intestinal coils were not only adherent to each other, but also to the abdominal wall. The patient had no further trouble for another six months, when the symptoms again returned, and she was operated upon the third time for the separation of additional adhesions. I have encountered one other case of that kind. The cause of the formation of such extensive and repeated adhesions does not seem to be well understood. In certain cases there seems to be a tendency to the formation of adhesions after abdominal and pelvic operations.

H. Bronner: I am especially interested in that portion of Dr. Sherrill's paper which refers to complications of the genito-urinary tract after abdominal operations. During the removal of uterine tumors, particularly those of malignant type, injury may not only be inflicted upon the ureters but also the bladder. The ureter may be totally divided, included in the ligature, seriously damaged by operative trauma, or devitalized by disturbance of its blood supply. The bladder may be injured during the separation of pelvic adhesions, or by direct operative trauma.

I was asked to practice cystoscopy upon two of the patients mentioned by Dr. Sherrill in his paper. The first patient had anuria after the operation, and the problem was to determine whether this was due to acute nephritis, mechanical constriction, or injury to the ureters. This was readily demonstrated by cystoscopy. The ureteral catheter was introduced to the left renal pelvis without difficulty, but on the right side an obstruction was encountered about 4 cm. from the vesico-ureteral orifice. Subsequent operation revealed that the ureter had been divided. Immediate uretero-ureteral anastomosis was practiced, but the patient did not survive.

The second patient had a vaginal urinary fistula, and the first problem to determine was the type of fistula with which we were dealing. Argyle was introduced into the bladder, and as the urine from the fistula remained clear we knew that the fistula was uretero-vaginal and not vesico-vaginal. The second problem was to determine the side involved. This was easily accomplished by cystoscopy. The ureteral catheter was readily passed to the right renal pelvis and normal urine obtained. An obstruction was encountered about 5 cm. from the vesico-ureteral orifice on the left side and no urine was secured, thus proving the existence of a left-sided uretero-

vaginal fistula. The circular flap operation described by Dr. Sherrill was performed with satisfactory result.

The lesson derived from cases of this kind is that the surgeon should always try to avoid such complications. It requires only a short time to insert the ureteral catheter, especially when the patient is under the anesthetic, and I believe this should be done in all operations upon the pelvic viscera. A number of prominent gynecologists have told me that the presence of the ureteral catheter has been of inestimable value to them in preventing ureteral injury during the performance of pelvic operations.

INFECTIONS OF THE HAND; THEIR DIAGNOSIS AND TREATMENT.*

By HENRY McKENNA, Louisville.

Infections of the hand are among the most common lesions with which both the surgeon and general practitioner have to deal. The infection may range from a mild process in the epithelial layers or in the pulp of the finger tip, to a virulent lymphangitis or permanent crippling of the hand by extensive involvement of joints, tendon sheaths and fascial spaces. The subject is an extensive one and can not be dealt with completely in one paper. I will therefore try to confine myself to a simple and practical discussion of the subject, taking up as briefly as possible the various types.

Of the simple infections, probably the most common form as seen by the general practitioner are those of felon and paronychia.

Felons are among the most common infections of the distal phalanx. The etiology of this type of infection is sometimes difficult to determine; usually, however, there is a history of injury. A sticking pain in the distal phalanx, which rapidly becomes throbbing in character is usually the first symptoms noticed by the patient. Sleep is interfered with, the finger becomes red, swollen, and tender to touch, this tenderness is most marked over the site of the infection. There is some question about the exact pathology existing in these conditions. The ordinary conception of the pathogenesis is that advanced by Roux; namely, that a sub-periosteal infection takes place via of the vessels. Against this assumption there are certain anatomical peculiarities which seem to point to another explanation of this condition, namely, the connective tissue framework is such as to produce a closed sac comprising the distal part of the phalanx, while the glands lying in the columns of fat present a portal for the entrance of pathogenic bacteria.

Treatment: This consists of immediate in-

cision into the infected area. Once the diagnosis of felon is confirmed, temporary measures are to be condemned. Do not wait until fluctuation appears before incision, as this causes unnecessary pain and much destruction of the connective tissue and even of bone. As soon as the edema restricted to the distal phalanx and accompanied by marked tenderness has reached a degree of hardness, incision should be made.

The after treatment consists in hot baths and dressings of hot boric acid solution.

Paronychia or "run arounds" are generally caused by organisms of low virulence, the streptococcus and staphylococcus being the most common. They begin ordinarily at one side of the nail as a simple infection, frequently from a hang nail or pin prick. This infection may be of two types. First, an acute infection, giving rise to a small abscess in the subepithelial tissues at the side of the nail which, if opened, make an immediate recovery, if neglected, spreads along the side of the nail and back to the bone, becoming in this instance a typical "run around." For a number of days a drop of pus will exude from the inflamed area about the nail edge, which shows a certain amount of swelling and redness with little pain. The process gradually extends itself around the nail.

Treatment: This consists in making longitudinal incisions along the outer edge of the nail going back to the base, as far as the sulcus, with especial care to cut to the outer side of the nail so as not to cut the nail bed or the overhanging cuticle, as this may result in a permanently split nail. The eponychium is now pushed back and the point of the scissors inserted under the detached edge of the nail and this is cut off, together with as much of the nail as has become separated from the matrix by the pus.

Carbuncular infection of the hand I shall not take up here as their treatment remains practically the same in all instances.

We come now to those graver infections, namely, tenosynovitis, lymphangitis, fascial-space abscesses, and their allied conditions.

We can only take these up in a more or less superficial way, giving only the main points in diagnosis and treatment, as time and space will not allow of a fuller exposition.

Tenosynovitis: The symptoms of tendon sheath infection differ only in degree from those of other infections of the hand. The disastrous consequences of delayed diagnosis are so well known, that one should study these cases most carefully, since in nearly every case diagnosis can be made and the function of the hand saved.

The three cardinal symptoms and signs are:

*Read before the Nelson County Medical Society.

(1) Exquisite tenderness over the course of the sheath, limited to the sheath.

(2) Flexion or semiflexion of the finger.

(3) Exquisite pain on extending the finger, most marked at the proximal end. It is to be remembered that there is very little reddening of the finger, that the finger is at first only moderately swollen, and that there is local heat. The greatest amount of tenderness is generally complained of at the proximal end of the finger, namely, the metacarpo-phalangeal articulation. From a surgical standpoint, the sheaths upon the flexor surfaces are the most important. These are divided into four heads:

(1) The tendon sheaths for the index, middle, and ring fingers.

(2) The tendon sheath for the thumb with its prolongation in the hand.

(3) The tendon sheath of the little finger and its prolongation in the palm.

(4) The communication between these various sheaths.

In calling your attention to the anatomy of these tendon sheaths I merely wish to impress on you the value the knowledge of this anatomy has on the treatment.

Treatment: This may be divided into three stages.

(1) The stage of doubtful diagnosis.

(2) When the diagnosis is confirmed.

(3) After treatment.

When a finger is first infected it is usually some time before the tendon sheath becomes invaded, during this early stage much may be done to prevent the infection extending into the sheath. To my mind the best method of treating these early or doubtful cases is to have the patient immerse the hand in hot boric acid solution from a half hour to an hour three or four times a day; during the intermediate time, a hot moist dressing is applied. Carbolic acid dressing in any form should be avoided, because of the danger of gangrene.

Next in importance, is to keep the part at rest.

Treatment after Diagnosis: The diversity of opinion among the leading surgeons as to the proper methods of treatment, is sufficient proof of the severity of this condition and the difficulty of its treatment.

Operative Treatment: This consists in opening and draining of the sheath.

Incision should be made on the side of the finger, and not in the median line, opening the sheath at this point. The incision should extend the length of the shaft of the phalanx along which it is made. Small incisions are to be condemned, as they soon become closed by prolapsing tissue. Make the incision too free, rather than too small. If there is much edema which would tend to close the incision, then one incision the whole length of the fu-

ger should be made. It is not practical that I take up here the individual treatment of the several tendon sheaths, suffice it to say that the tendon sheath of the long flexor of the thumb and little finger are the most difficult.

Lymphangitis may be of two types, superficial and deep. Of these the superficial is most common, owing to the fact that slight abrasions, superficial fissures, and small punctures, disregarded by the patient because they are considered of no importance, are generally the source. Frequently no history of injury can be secured. The patient may have noticed a slight malaise, or some slight swelling in the hand or arm, accompanied by a dull pain. On account of these symptoms the patient sees the doctor who finds in addition to the above, a red line running up the forearm corresponding to the distribution of the lymphatics.

There may or may not be tenderness or swelling in the axillary glands. The degree of systemic involvement varies markedly.

Types of Lymphangitis: Four types may be distinguished.

Type One. Mild Acute Lymphangitis.

From an insignificant abrasion several red streaks may be traced up the forearm and into the mid-axillary group of glands. Slight swelling and tenderness may be present in these glands. If the patient's resistance is high, the local process and streaks may disappear within twenty to forty-eight hours.

Type 2. Mild acute lymphangitis with minor local complications. Where a more persistent or virulent type of infection occurs, resolution may or may not be so rapid. In this event, abscesses may form at the site of inoculation, with the formation of abscess, mild constitutional symptoms are present. Chills with moderate or high fever may be present. The patient may react favorably after days or weeks of intense sepsis and recover, or may succumb to an intense bacteremia.

Type 4. Severe acute lymphangitis with serious local complications.

In this type the complications arising end in tenosynovitis or subcutaneous abscesses. Systemic intoxication is more marked. Associated with the streaks, the forearm becomes greatly swollen, tense and tender. The skin is leather-like in consistence and pits on pressure, small blisters and blebs may be present. The accompanying constitutional symptoms are severe.

Type 4. Severe systemic acute lymphangitis. In this type the process may give rise at once to most alarming systemic symptoms. There are chills followed with high fever, the patient is prostrated and of haggard appearance. The patient may react favorably after

days or weeks of intense sepsis and recover or may succumb to an intense septicemia.

Treatment: The treatment hangs largely on the diagnosis. If suppuration is present drainage should be promptly instituted; on the other hand, where the condition is one of pure lymphangitis and an incision is made before the localizing process has been well walled off, incision is fraught with danger.

In refraining from incision, the surgeon is chiefly guided by the character of the inflammation, the bright coloration, the mild character of the throbbing pain, and the absence of the acute or exquisite tenderness which characterizes the early presence of pus.

Immersing the hand and arm in hot water or hot boric solution for one hour, several times a day, produces a hyperemia which is invaluable; especially, early in the condition, before definite diagnosis is reached. General treatment consists of rest, abundance of water, mild catharsis and general supportive measures. Vaccines and such therapeutic measures as are in general use many times have beneficial effect. They are, however, used to best advantage early in the process before suppuration has taken place.

Fascial-Space: Due to primary infection, or secondary to lymphatic or tendon sheath infection, pus may be found in various spaces in the hand. When this occurs, we have what is known as a fascial-space abscess. These spaces which are fairly well defined are five in number.

- (1) Middle palmar space.
- (2) Thenar space.
- (3) Hypothenar space
- (5) Dorsal subaponeurotic space.

The first two, namely, mild palmar and thenar spaces, are by far the most important and we will therefore devote most of our time to the discussion of these two.

Now, how shall we diagnosticate an involvement of these various spaces? The mid palmar space would receive infection by extension from the middle, ring, and little fingers; also, from localized infections in the canals between the heads of the metacarpals. The thenar space might receive infection from the index finger or thumb, or by direct implantation; and, also, it is possible for this space to become infected secondarily to the mid-palmar space.

When the thenar space becomes infected the swelling is great. There is induration rather than the softness of edema. The space will look as though ballooned up. Beside this ballooned appearance the metacarpal of the thumb is pushed away from the hand, and the flexion of the distal phalanx becomes more marked.

The edema on the back of the hand is al-

ways present, and the swelling much greater than in the palm, though the site of pus is usually in the palm. We should bear in mind that edema give rise to a soft pitting, whereas, if pus be present, either induration or fluctuation can be felt.

Treatment consists in incision, and drainage. In mid-palmar space involvement the incision is placed, preferably between the metacarpals of the third and fourth fingers. The loose tissue of the palmar space is greatly explored, preferably with the finger and free drainage established. A drain of gutta percha or gauze, over which vaseline has been spread, may be inserted and left in situ for several days. In involvement of the thenar space a dorsal incision is preferable. Incision here is made parallel to the axis of the index finger and to the thumb side of the bellies of the interossei muscles of the finger, otherwise treatment remains the same.

General Consideration. Great care should be used in the preliminary treatment of minor as well as major injuries. Rest is an essential factor in so far, that muscular action should be guarded against, since muscular action aids the lymphatic streams in their flow.

Hot, moist dressing or immersion in hot baths have proved beneficial in many cases. Personally, I prefer to use hot baths or boric solution or plain water allowing the hand and forearm to be soaked in this bath for an hour or so, and then apply during the interval between baths, a hot compress.

Incision. When incision has been decided upon the operation should be done in a bloodless field.

An anesthetic is essential to good surgery in these conditions. Where exploration or some procedure more than a simple incision is necessary a general anaesthetic is necessary. Drainage may be instituted following the incision by the use of gauze, tubes, rubber tissue, etc. Gauze is indicated where much bleeding follows the incision, or where the edema is so great that prolapsing of tissue is apt to close up the wound and interfere with proper drainage.

The criticism of one may by another is not so often due to malice as it is to misunderstanding, or perhaps the commendable attempt to make everyone fit high standards.—Morris, Drs. vs. Folks.

To the aged with retention of urine it is dangerous to completely empty the bladder at once as fatal hemorrhage may follow the release of pressure.—E. Englander, Therap. Record.

ENDOCARDITIS.*

By W. R. BURR, Auburn.

In the outset of this paper, I want to make an honest confession which is said to be good for the soul.

After about twenty-seven years experience in the practice of medicine, during which time I have endeavored to be a student of my profession, and as close an observer and thinker as possible, I want to state, very frankly, that my ability as a diagnostician, when it comes to dealing with diseases of the heart, falls far short of that possessed of an Osler or a Hare.

But while these masters of medicine may be skilled in solving most of the problems of pathology and physical diagnosis, and are capable of displaying wonderful insight as to the workings and disturbances of the human heart, they are candid enough to admit that they are placed considerably in the attitude of guessers in determining whether a patient with an acute infectious disease has a pericarditis or an endocarditis that develops in the course of the affection.

Neither of these men offers in his text-book much information that is helpful in treating the subject of endocarditis; nor have I been able to find very much consolation relative to it in the writings of any other authority that I have had access to.

But after all, experience, close thinking and the exercise of common sense are more profitable than poring continually over "miserable books."

By this I do not wish to be understood as placing a discount on the study of text-books and the acquisition of theoretical knowledge; but, as Aunt Jane of Kentucky, says, "Schoolin' is a mighty good thing, but every now and then there's somethin' you can't get out o' books."

But, as to endocarditis. This affection, according to consensus of opinion, rarely occurs as an independent disease, but is concurrent with, or follows in the wake of, some infectious disease. It is divided into three forms, namely, a simple, acute and so-called benign form, the chronic form and an ulcerated or malignant type.

It is conceded, also, to be of bacterial origin, but the special causative organism has not been singled out. There seems to be a bacterial conspiracy in the production of the disorder, as a conglomeration of organisms is present in the vegetations that are found on the endocardium in and around the valves in endocarditis.

As endocarditis occurs most frequently in rheumatic fever, the diplococcus rheumaticus

is the most common organism found in the affection. Chorea, which is a rheumatic condition, is probably the next most prolific cause of endocardial inflammation, and tonsillitis, which is also supposed to be on the rheumatic order, comes in as a causative factor. Scarlet fever, typhoid fever, gonorrhoea, and a number of other infectious diseases may have endocarditis as a complication. But gonorrhoea is more apt to cause the ulcerative type of the disease than the simple variety.

I shall have very little to say as to the pathology of endocarditis, since a rehearsal of that phase of the subject from the text-books would be an unnecessary imposition on your patience. Suffice it to say that the mitral valves are more frequently attacked and inflamed than any other portion of the endocardium, the theory being that this is due to the fact that the arterial blood is more highly oxygenated than the venous kind. Vegetations, principally composed of fibrin, may organize permanently in this affection, adhesions and distortions of the valves and chordae tendinae may occur, and calcifying deposits may add rigidity to the leaflets and produce more or less occlusion to the orifices.

Of course these changes prevent the valves from performing their normal functions, and murmurs and other abnormal sounds are produced.

Endocarditis, as one of our best authorities puts it, ends in one of three ways: First, the acute inflammation may subside and leave little or no alteration behind it; second, the vegetations may persist and form large masses of nodules on the valves; third, the valves may become eroded and adherent, or cicatricial contractions may lead to distortions and immediate insufficiency or obstruction.

As to the symptoms of endocarditis of the primary acute type, they are conspicuous for their absence, and one must be on the *qui vive* with suspicion, if he is to recognize its occurrence.

Dr. Thomson, in his work on Clinical Medicine, says: "Physical examination of the heart is much more difficult than that of any other organ;" and unless we keep close tab on it in all infectious diseases we are likely to have a serious cardiac involvement "put across" on us.

In endocarditis the pulse, as common sense would teach us, is accelerated and the temperature is higher than before the endocardium became inflamed. But as these symptoms are not constant or characteristic, we cannot rely on them altogether.

There may be palpitation; and, in rheumatism, an increase of temperature without an increase in the articular trouble should arouse suspicion. And the occurrence of a mitral murmur in the course of a rheumatic fever

*Read before the Logan County Medical Society.

is considered proof positive of an endocardial involvement. Any decided departure from the usual action of the heart in the course of an infectious ailment, especially those of the rheumatic variety, should put us on our guard. Unfortunately, however, a lack of symptoms is prone to mislead us and cause us, if we are not very careful, to overlook an endocarditis, until the patient is "up and about," and shows a weak heart, with dyspnea; when we discover that an endocarditis has gotten in its work, and that the damage done is past being remedied.

There may be a pericardial complication in endocarditis, or an embolism of the pulmonary or cerebral arteries may occur, as may, also, an infectious pneumonia.

Ulcerative or malignant endocarditis is the result of a profound infection of the endocardium and is a hopeless condition.

Death seldom occurs during the acute stage of a simple endocarditis, the rule being that a case drifts into a state of chronicity, and a fatal termination usually comes some months or years after the primary onset.

In the treatment of this affection, as in all others, an ounce of prevention is worth a ton of cure, since there is no specific remedy for this affection that can be exhibited. As nearly absolute rest as possible during and for some weeks after all infectious ailments, is the best means of preventing the trouble.

Diet should, of course, be light, and easy of digestion, and care should be taken to avoid overtaxing the digestive apparatus.

I believe Thomson is right in his opinion that the salicylates are of no avail in preventing the trouble or influencing favorably an endocarditis after it has occurred, in the management of a case of rheumatic fever, their only benefits being shown in lessening the pain and probably the fever caused by the rheumatic seizure. He recommends as the best treatment for cutting short the rheumatic attack and warding off a complication of endocarditis, a modification of Fuller's prescription, the administration of the alkalies, the formula being from 1 to 2 drams of bicarbonate of potash with a scruple of the citrate of potash every two to three hours until the urine is alkaline, when they may be given less often, lessening the interval should the acidity of the urine return. It is claimed that by following this course endocarditis need not complicate rheumatic fever. The treatment certainly appeals to common sense.

If endocarditis sets up, however, and the heart becomes unruly and seems in distress, aconite judiciously administered is perhaps the best remedy for controlling it. The soft pedal must be applied and sure-enough rest secured.

After the acute symptoms have subsided,

the heart should, of course, be watched and given adequate stimulation and support, but we should be sure not to overdo the thing in our zeal to render it assistance.

I must make another honest confession in admitting that I do not have, and have never had, a clear conception of the use of digitalis. It seems to me that it is a very potent drug for evil, if injudiciously used. I am of the opinion, though, that when we have a weak heart to contend with, and the pulse is weak and fast and compressible, digitalis in small doses, along with tincture of nux vomica, does good and helps in establishing compensation.

A drug that has given me good service, I'm sure, as a safe, dependable heart tonic and stimulant, and one which I believe influences favorably all organic lesions, as well as functional heart disturbances, is crataegus, from English hawthorne, an Eleetic preparation much used and highly lauded by members of that school.

I am aware that the high-brow therapists of our so-named regular school are rather inclined to scout the idea that this, or any other, remedial agent that is not in the orthodox list is of any value, and class it as impotent and useless; but proof of the pudding is in the eating, and we should not be dogmatic and condemn a thing we have never tried.

For the anemia and general weakness that accompany cardiac derangements following endocarditis, iron, arsenic and the other re-constructives are to be found of assistance. Repair work, which is frequently provokingly short of satisfactory results, is all that can be done for the unfortunate one who has been a victim of endocarditis.

The Rebman Company is constantly producing good, practical books. Its most recent one is a book of surgical operations illustrated by clinical observations by physicians and students, by Prof. Krause, the Director of the Augusta Hospital of Berlin, and Dr. Heyman, Chief Physician of the same hospital. This is the second volume of the series of 6, which will cover the entire subject. Chapters on surgical procedures in the upper and lower jaw, oral cavity, pharynx, salivary glands, brain and brain tumors, profusely illustrated, make up the book.

No student of surgery can afford to be without it.

Mayo-Robson reports two cases of nerve grafting between ends of divided nerves with complete restoration of function. In one case both median and ulnar nerves were united by inserting portions of the sciatic nerve and fraction of the spinal cord of the rabbit. Six years after the functional result was almost perfect. In the present war Mayo-Robson has been successful with this procedure in a large number of cases.

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ASHLAND, 1917

COUNTY SOCIETY REPORTS

Barren—The Barren County Medical Society met in Glasgow in the office of Dr. A. T. Botts, April 17, 1917.

Members present were, White, Botts, Smock, Howard, Carroll, Miller, Britt, Taylor, Siddens, Depp, Palmore, and Acton. Dr. R. S. Plumlee late of Madison, Wisconsin, was present as a welcome visitor.

The meeting was called to order by President T. F. Miller.

Clinical cases were presented and described by several members, and interesting discussion followed.

J. G. Siddens presented a most interesting case of a man who had a typical case of pellagra, the patient being fifty-four years old. This is the second case exhibited to this society. The treatment suggested is arsenic and iron with gentle exercise, and a generous diet.

R. S. Plumlee, in response to calls, gave an interesting talk, describing his experience in the Northwest, and showing some interesting points of contrast between medical practice there and here.

A committee having been appointed to prepare resolutions expressive of our sentiment regarding the German war in which our country is involved, the following resolutions were read and unanimously adopted:

First: We, the members of the Barren County Medical Society, endorse the action of our President in upholding the rights of the people of the United States against the inhuman warfare of Germany and her allies..

Second, We hereby tender our services to the Government, if needed.

F. G. CARROLL,
E. D. TURNER,
J. B. WHITE,

Committee.

Agreed, on motion, that we hold our annual meeting in Glasgow, on the 18th day of July, providing suitable arrangements can be made for that time. The Secretary was directed to correspond with Dr. J. N. McCormack and other lecturers, and ascertain when they could be with us, and report if possible, at our May meeting.

Adjourned to meet May 16, 1917.

J. MORGAN TAYLOR, Secretary

Carlisle—The Carlisle County Medical Society met in Dr. J. F. Dunn's office April 3rd, 1917, at 10:30 A. M.

President H. T. Crouch in the chair. Rev. T. B. Rouse opened the meeting with prayer. Rev. H. R. Taylor delivered the welcome address.

He complimented the doctors on meeting and showing so much interest in their profession. What strong characters we should be in our community, resembling so much of our Great Creator

as we minister to the sick, and doing so much for suffering humanity.

G. W. Payne made a splendid response to the welcome address on behalf of the society.

The minutes of the last meeting were read and approved.

W. L. Mosby read a paper on "Diabetes Mellitus," which will be published in the Journal.

H. A. Gilliam, "Complications and Treatment." Dr. Gilliam being absent the paper was read by title.

J. S. Marshall opened the discussion. He complimented the essayist very highly on his splendid paper. He thinks diet the principal treatment.

R. T. Hocker in his discussion thinks opium one of the best treatments.

G. W. Payne, in discussion of the paper referred to the blood pressure being low.

H. T. Crouch reviewed Dr. Frederick Allen's starvation treatment for diabetes.

W. L. Mosby closed the discussion. Diet the first and foremost thing in the treatment.

Noon adjournment.

AFTERNOON.

Miss Eva McKindree read a paper on "How Teachers Can Help Doctors in Their Work."

The paper was discussed by the doctors present and motion was made and carried that the paper be sent to the Journal for publication.

T. A. Pease read a paper on "Symposium Menorrhagia and Metorrhagia, Etiology and Pathology."

J. F. Dunn read a paper on "Treatment."

The papers being satisfactorily discussed by all present, Dr. Dunn closed the discussion.

Motion made and carried that every paper be sent to the Secretary one week before the meeting. If the essayist is absent the paper can be read and sent to the Journal for publication.

The society adjourned to meet the first Tuesday in June. Place not named.

W. Z. JACKSON, Secretary.

Franklin—The Franklin County Medical Society met in social session with Dr. John Patterson as host, April 10th, at 7:30 P. M. The following members were present: Drs. Roemele, vice-president, presiding; Wilson, Keller, J. P. Stewart, A. A. Stewart, Garrett, Minish, Martin, Heilman, Williams, Coblin and Fish. After routine business, adjourned to Mecca Cafe, where the host served a sumptuous repast, to which all present did ample justice. Round table discussion was then in session, subject, "Gastric and Duodenal Ulcer," resulting in a discussion by all present which was both instructive and entertaining. The Secretary was ordered to communicate with the Journal the successful departure of the Round Table from the old established regime of soliciting papers from members which was reluctantly or not at all complied with, to

which we have always attributed the lack of interest in county societies, especially so it was with us. Since we have adopted the Round Table our attendance has been largely increased and all members contribute their five or ten minutes to a discussion of the subject and we suggest to county societies that are waning to try this experiment. After which a resolution was adopted thanking the host for the entertainment. Dr. J. P. Stewart will entertain the society at its next meeting, May 12th, at 5 P. M. Subject of the Round Table will be "Organo-Therapy," embracing thymus gland, supra-renal capsule, pineal gland.

Adjourned.

U. V. WILLIAMS, Secretary.

Fulton—The Fulton County Medical Society met in regular session at the Commercial Club, Fulton, April 11, 1917. J. B. Paschall being absent, H. Luten took the chair. Minutes of the last meeting read and approved. Those present, H. E. Prather, Lon Naylor, H. Luten, J. M. Alexander, P. B. Curlin, H. T. Alexander, R. N. Whitehead, Geo. Crafton, and S. Cohn. Visitors, Drs. Yates and J. T. Baker. Dr. Baker, of Hickman was later received as a member of the society.

Several papers were read and a lively discussion by the members followed.

The society elected the following officers for the year 1917: Lon H. Naylor, President; R. N. Whitehead, Vice President; S. Cohn, Secretary and Treasurer; P. B. Curlin, Delegate to State Meeting; H. T. Alexander, Alternate.

L. COHN, Secretary.

Graves—As you have not had a report of the Graves County Medical Society for some time, I thought I would let you know we were still on the firing line. The society met at its regular meeting at Dr. G. T. Fuller's office, Thursday, April 12th. There were twenty-four doctors present and this meeting proved to be very interesting. There were several papers on the program, but the one that elicited the most discussion was a paper read by **J. H. Shelton**, on "The Complications Following Measles." The high cost of living, and the poor collections from those that can and don't, known as "dead beats," was generally discussed, and a committee was appointed to draft resolutions and to present them to the society, Thursday, April 19th, at which time the society will meet again. On invitation from B. F. Flint, the society convenes at Wingo, May 31, at which time the Graves County Medical Society invites Fulton and Hickman County Medical Societies to meet with us. We anticipate a great meeting. At present we have twenty-nine members, in good standing, and I believe at our next meeting, May 31st, I can report to you every physician in Graves county a member in good standing.

The officers for the year 1917, are as follows:

J. F. Kirksey, Sedalia, President; G. F. Fuller, Mayfield, Vice President; E. A. Stevens and Jno. L. Dismukes, Mayfield, Delegates; J. G. Puryear and W. J. Shelton, Mayfield, Councilors; H. H. Hunt, Mayfield, Secretary and Treasurer.

H. H. HUNT, Secretary.

Franklin—The Franklin County Medical Society met on Tuesday, May 8th, at 5 P. M., in social session at Stewart Home with Dr. John P. Stewart at host. Present, Drs. Minish, Fish, Maus, A. A. Stewart, J. P. Stewart, Mastin, Montfort, Helm, Williams, Garrett, Coblin, Coleman and Mrs. H. H. Farmer. In the absence of both the president and vice president, Dr. Montfort was chosen president, pro tem. Minutes of the last meeting were read and approved. Temporary adjournment was had in order that the doctors present might inspect the home and visit the various departments, after which a resolution was unanimously passed endorsing the Stewart Home, its management, its surroundings, sanitary conditions and perfect adaptations of all its appointments to its care and instruction of all its inmates whom Dr. Stewart denominates "his pupils" and calls them his family of boys and girls. After which the society repaired to the dining room where a delightful dinner of five courses was served by the most charming wife of the host; to say it was enjoyed to the fullest, is but a feeble manner to express the real appreciation of the sumptuous and excellent repast. At the end of which the Round Table was called, the subject of which was "Care of the Mental Defective" which was presented by Dr. John P. Stewart in a most instructive and exhaustive manner, it was then discussed by many of the members present. After which a resolution was adopted by a rising vote thanking Dr. Stewart and his wife for their generous hospitality and cordial welcome.

Adjourned.

U. V. WILLIAMS, Secretary.

Harrison—The Harrison County Medical Society met at the Court House March 5, 1917, with the following members present: Drs. McLaurin, N. W. Moore, Rees, Wells, W. B. Moore, McDowell, Martin, Givens, Smiser, Best, Morgau, Wood, Carr, and Blount.

The meeting was called to order by President Wood. The minutes of the last meeting were read and approved as read.

J. E. Wells presented a very interesting case of "Muscular Distrophy," in a boy ten years of age.

J. M. Rees reported a case of "Pelvic Tumor" in a colored woman 26 years old. Tumor of ten months duration, exploratory measure proved growth to be malignant and inoperable.

D. M. Brickly of Robinson, elected to membership.

H. C. Blount read a paper on "Appendicitis in Females."

J. E. Wells read a paper on "Focal Infections."

These papers were discussed by Drs. McDowell, Givens, Best, N. W. Moore, Martin, Carr, Wells and Blount.

Meeting adjourned.

W. B. MOORE, Secretary.

Johnson—At a meeting of the Johnson County Medical Society, Saturday, April 7, the following officers were elected for the ensuing year:

F. M. Williams, President; J. C. Sparks, Vice President; J. P. Wells, Secretary; G. V. Daniel, Treasurer.

J. P. WELLS, Secretary.

Pendleton—The Pendleton County Medical Society met in Falmouth, April 11th, 1917, with every member present except one. It was one of the best meetings we have ever held.

There was only one essayist present, who was prepared, and whose paper I am sending you.

This paper brought out a splendid discussion. The remainder of the time was given to report of cases in which all present indulged freely.

Altogether the members showed more spirit and enthusiasm than has been shown for some time.

L. T. ECKLER, Secretary.

Russell—The Russell County Medical Society will hold its next meeting May 14th, at Hotel Jamestown. A very interesting program has been arranged and every doctor in the county is urged to be present.

J. B. SCHOLL, Secretary.

Rockcastle—A very important meeting of the Rockcastle County Medical Society was held in the office of Dr. A. G. Lovell, Mt. Vernon, at 2 o'clock P. M., April 18, 1917.

The principal topic of discussion was a communication from the State authorities in regard to the organization of a Reserve Corps for service in the war. A resolution endorsing the movement unanimously passed and Drs. E. W. Walker, W. E. Gravely, A. G. Lovell and Walker Owens, as members of the County Board of Health, were appointed a committee to take the matter up with the proper authorities and pledge the loyalty of the entire association to our country in this great crisis.

Another important matter was brought before the association by W. F. Carter, of Broadhead, who gave an interesting talk on the subject which was generally discussed and endorsed by resolution, was a communication in regard to the employment of a County Nurse for Rockcastle county, and the above mentioned members of the County Board of Health were appointed

as committeemen to meet with the Fiscal Court and discuss the proposition.

Every member present was enthusiastic in his support of the Government in the present war, and the chances are some of them will see active service unless the war closes soon.

NEWS ITEMS AND COMMENTS

Dr. G. W. Payne, Dr. T. J. Marshall and Dr. H. T. Crouch have been appointed members of the Kentucky Committee for Medical Defense, to serve as such during the continuance of the war. The local committee is an auxiliary of the State organization and their duties consist of aiding in every possible way to supply the army with medical assistance and to recommend those in the county who they think would prove to be of service in this department of the government's preparation for war.

A few of our readers realize the wholesomeness of gelatin. This desert dish is not only palatable but it is a distinct health aid. Its use is simple and convenient, and, while not a good substitute for albumen, it has the faculty of saving albumen in the body from destruction. Jiffy-Jell, a description of which will be found in our advertising columns, is probably the best gelatin that can be secured, and we would urge the doctor's wives to try it.

BOOK REVIEWS

The Practical Medicine Series, Volume IX, Skin and Venereal Diseases.—Edited by Oliver S. Ormsby and James Herbert Mitchell. Series 1916, The Year Book Publishers, Chicago.

While no startling discovery was made in dermatology in 1916, there appeared, however, a few valuable contributions in this field. The influence of diet on the skin has been thoroughly studied and the anaphylactic reactions caused by some foods have been investigated. This little volume reviews the work done by many investigators and shows the wonderful progress made. War dermatoses have also been thoroughly studied and the remedies are clearly discussed and described by its able authors, Ormsby and Mitchell. The causes of a great many other dermatoses have been investigated. Particular attention is drawn to the study of different erythemas.

Electrolysis has been brought forward as a valuable agent in the treatment of cases of stubborn gonorrhea and this mode of treatment is in great favor among the English specialists.

This little volume is found very valuable by both, the specialist and the general practitioner.

The New Method in Diabetes—The practical treatment of diabetes as conducted at the Battle Creek Sanitarium, adapted to home use, based upon the treatment of more than eleven hundred cases. By J. H. Kellogg, M. D., LL. D., Chief Medical Director of Battle Creek Sanitarium. Good Health Publishing Company, Battle Creek, Michigan. Price \$2.50 net.

This volume is a digest of the latest treatment of diabetes and will serve as a guide to the physicians who has these cases to treat. Under the regimen recommended the diabetic seldom fails to become "urine sugar free."

Several chapters are devoted to excellent recipes prepared by Miss Lenna Cooper, Director of Battle Creek Sanitarium School of Home Economics. The caloric value of each recipe as given makes this book of inestimable value in the hands of the patient and nurse.

Traumatic Surgery—By John J. Morehead, M. D. F. A. C. S. Adjunct Professor of Surgery in the New York Post-Graduate School and Hospital. Octavo volume of 760 pages with 522 original illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth \$6.50 net. Half Morocco \$8.00 net.

This book is written with the main idea of placing in one volume the information necessary to diagnose and treat all the usual and most of the unusual effects of accident and injury. The profession at large has become reawakened to the problems of accident surgery and has come into a new relationship with the injured because of the operation of compensation and allied laws. An effort has been made to standardize the treatment of such common injuries as wounds, infections, burns and the usual fractures.

Diseases of the Genito-Urinary Organs and the Kidneys—By Robert H. Greene, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and Harlow Brooks, M. D., Professor of Clinical Medicine, University and Bellevue Hospital Medical College. Fourth Edition Thoroughly Revised. Octavo of 666 pages, 301 illustrations. Philadelphia and London W. B. Saunders Company, 1917. Cloth, \$5.50 net; Half Morocco, \$7.00 net.

It has been the purpose of the writers to present in this volume a discussion of the more important disease conditions of the uro-genital tract, taken from the standpoint of the general practitioner and surgeon. In so far as possible they have attempted to incorporate such methods as they personally have found most practical and useful.

A large amount of space has been devoted to the urinary organs proper.

The work is the conjoint product of a surgeon and a physician and it is intended that equal attention should be devoted to both medical and surgical aspects of these diseases.

KENTUCKY MEDICAL JOURNAL

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No. 7

EDITORIAL

THE SUBJECT PROGRAM.

Under Official Announcements, we are publishing the Subject Program, as prepared by Dr. Redmon for the Committee on Scientific Work for the Ashland Session. Please write the Secretary, as soon as possible after you read this, if you desire to suggest any additional subjects, or if you wish to prepare a paper on any of these subjects.

It is important to remember that the Association expects only practical papers. Technique and methods can best be disposed of in longer articles in the JOURNAL. Papers read before the State meetings should be snappy, based on practical experience and study, and not too long.

Ashland promises the best meeting that has ever been held, and it is up to the profession of the State to set the scientific standard high.

THE MEDICAL DEPARTMENT OF THE ARMY AND NAVY.

The Medical Department of the Army, Navy and Public Health Service are responsible for the examination of recruits, the prevention of sickness in or about camps and for the care of the sick and wounded. Neither of these three medical departments have as yet been given either authority or means to meet these responsibilities.

The President can give the three medical corps full authority because he is Commander-in-Chief of the Army and Navy—Congress can give them the money—both the President and Congress will do so when it is made clear to them what is wanted and why.

Neither the President nor Congress will recognize the necessity or justice of these claims until the medical profession has volunteered enough qualified men to do the work.

We would suggest that you discuss this matter with the other physicians of your country, or editors of your newspapers, and that you write to your Congressman and the President about them.

THE DUTY OF THE MEDICAL MEN IN THE PRESENT CRISIS.

Every member of the Kentucky Medical Association, who was at Hopkinsville, will remember the wonderful address by Dr. Jos. C. Bloodgood of Baltimore. We preface this statement to one in regard to a recent address by Dr. Bloodgood delivered before the American Medical Editors' Association in New York upon the subject at the head of this editorial, so as to re-introduce him to the physicians of Kentucky. Among other important statements, Dr. Bloodgood in his New York address says the following:

"At the present time the number of doctors in the Medical Reserve Corps is so much less than the immediate requirements that it is impossible for the Surgeon General's office or any of the working committees to make a selective draft. * * * The demand will soon be 10,000 and at the present time there is not more than 4,000 available. * * * The medical man under 55 years of age who does not volunteer his services to the Government not only fails to perform his patriotic duty to his country and to his profession but also does an injustice to his colleagues who have volunteered their services. * * * Not until the number of officials in the medical Reserve Corps is far greater than the demand will it be possible for the Surgeon General's office to make a fair selection according to age, experience, and specialty. * * * Therefore, the first duty of a medical man in this crisis is to volunteer his services at once and without any reservation. * * * When you volunteer clearly give a description of what you want to do. * * * Every state and many cities have their special committee on preparedness, whose duty it is to take care of volunteers for the Officer's Medical Reserve Corps. Consult these committees first and do not overburden the Surgeon General's office with correspondence or personal visits. * * * Medical men under 30 with one year hospital experience who desire a medical life career in the Army and Navy or public health service

should apply at once to the Surgeon General of the corps they decide to enter. There is a tremendous demand for men of this kind at once and you are therefore doing a patriotic duty in addition to selecting an honorable career filled with opportunities which should satisfy the most ambitious graduate in medicine. * * *

The duties of a medical man in this crisis, therefore, is to volunteer at once, get your credentials properly before the Committee on Preparedness, see that it is given in detail what your financial sacrifice will be and have it thoroughly recorded whether you are actually needed in your civic duties. For example, a surgeon to a great industry. Give in the greatest detail what your training has been. * * *

Get others to volunteer and so increase the number to a point that selective draft will be possible. * * *

The examination of recruits for the new army is the first and perhaps one of the most important functions of a military medical officer. The majority of men in civic practice object to this duty because, I believe, they do not understand its importance. * * *

If we have a sufficient number of physicians in the Medical Reserve Corps this examination of recruits can be performed with dispatch and accuracy and with the protection both of the Government and of the individual. An insufficient number of medical men will make this impossible. * * *

When the troops are assembled in mobilization camps it requires a large number of trained physicians to protect them from diseases. * * *

Should epidemics of infectious diseases break out in these camps because of an insufficient number of medical officers it will be the fault of the medical profession throughout the country who have not volunteered and not the medical department of the Government. * * *

Medical science has developed to such an extent that we can protect our men provided the medical department are given the means for this protection. * * *

One of the most important means is sufficient number of doctors. * * *

Remember—an army without ammunition is helpless and so also is an army without a sufficiently large medical corps."

The medical profession of Kentucky is volunteering far better than in any other State. From some counties every physician under fifty-five years of age has been enrolled; in others, there have been no applicants. It is the opinion of the JOURNAL that it is only a question of time until there will be a selective draft of medical men. This has been found necessary in England and France. When the draft comes we would like to see every member of the Kentucky State Medical Association who can pass the physical examination enrolled in the Medical Reserve Corps, as we would feel better if all of our doctors vol-

unteered so that none of them would have to be drafted. Physicians who desire to apply can see either Captain Frank T. Fort, at the Atherton Building, Louisville, or Major A. T. McCormack at the office of the State Board of Health at Bowling Green.

MEDICAL SERVICE IN THE WAR.

The physicians of Kentucky are enrolling for the Medical Reserve Corps a little more rapidly than are those from any other state. This is as it should be. It is urged that the members of the profession especially bring to the attention of younger men—those under thirty-five years of age—the urgency of their enrolling at as early a date as possible. It does no good to delay the matter as the country needs them and will secure them one way or another.

THE JOURNAL believes it will be better to adopt the selective draft for doctors at the beginning, otherwise many sections of the country will be drained while some will not do their share. The Surgeon General's office is doing everything humanly possible toward organizing those who are enrolling. There will be necessary delays at the beginning, but everybody will get their notification for service in due time and the Kentucky members of the Medical Reserve Corps of the Army will reflect credit on it and the country.

THE NEW YORK SESSION.

The New York session of the American Medical Association was a notable one in many respects as was to have been expected from the existence of the War. The attendance from a distance from New York was not very great, but the different section meetings at which we were present were well attended and the scientific proceedings seemed to be of unusual interest. This was particularly true in the section on preventive medicine in which there was a timely discussion of medical questions involved in the War, which was most valuable.

Possibly the most important action of the House of Delegates, was its declaration that it is the belief of the American Medical Association that alcohol should no longer be used as a beverage and that its therapeutic value is negligible. Resolutions were passed taking very advanced ground on the subject of venereal prophylaxis, and, as these resolutions were inspired by the medical section of the Council of National Defense, it is to be hoped that they can be put into practical effect. The Association strongly endorsed Senate Joint Resolution No. 63, which creates a Sanitary Reserve Corps for service in emergencies.

On the second day of the session, the House

adopted the report of the Council on Scientific Assembly without discussion. This report seriously curtailed the time of a number of the most important sections of the Association and raised such a howl that the action of the House of Delegates was reversed at its final meeting and the sections remain as before.

The proceedings of the House of Delegates for the past several years have been far too cut and dried. For this reason all those interested in the future of American medicine were interested in the new departure of having a Speaker for the House of Delegates. While this innovation practically makes the Presidency of the Association purely honorary, he having no other function than to deliver an annual address, its effect on the House of Delegates was noteworthy. The Association was particularly fortunate in its selection of its first Speaker, Dr. Hubert Work, of Colorado. A few sessions conducted as this one will restore the House to its old function as a deliberative body and will enable it to do constructive work.

Those of the members who are familiar with the inner-workings of the Association were considerably surprised when a special committee was created with power to act for the Association in the matter of memorializing the President in connection with medical matters during the War. This same procedure was resorted to at the Los Angeles session of the Association, and, if the committee then selected, of which Dr. John B. Murphy was Chairman, had received the support of the officers of the organization which its importance and functions merited, most of the medical problems which now confront the profession and the country would have been settled long ago. It is with particular pleasure, therefore, that we note the creation of this special committee, and the high character and reputation of its members, and we feel sure that their action will receive the support of the profession.

At the same time, one cannot help feeling a little distressed at the necessity for giving unlimited authority to a committee which is not composed of delegates to enact resolutions which are the specific function of the delegates. Authority is rarely delegated by a representative body without loss of prestige.

In the selection of its officers for the next year, the Association was particularly fortunate. Dr. Arthur Dean Bevan, of Chicago, was elected President. Dr. Bevan for the past fifteen years has been Chairman of the Council on Medical Education and his devotion to the great ideals in medical education has probably been responsible for the largest percentage of the wonderful development in this field. Dr. Bevan is one of the great con-

structive medical statesmen of the age and we only regret that he hasn't much more authority in the Association, because we feel it would be exercised for the benefit of the profession and people of the country.

Dr. John McMullen was elected Vice President, upon the nomination of the Kentucky Delegation. It was particularly gratifying for the members of the Delegation to be able to assist in conferring this honor upon the man who has done such great work, so unselfishly, for those people of Kentucky, who have been afflicted with Trachoma. Dr. McMullen's trachoma work has been a real contribution to scientific medicine and the association was glad to honor him. The Kentucky Delegation also had the honor of nominating Dr. Holman Taylor, of Texas, for the Fourth Vice Presidency. Dr. Taylor is Secretary of the Texas State Medical Association, and is a Major in the line of one of the Texas Military Regiments. For many years, he has been one of the most lovable and effective members of the House of Delegates and the whole membership enjoyed honoring him in his absence.

LIBERTY BONDS.

The Campbell-Kenton County Medical Society has been the first to follow the example of the State Association by investing in Liberty Bonds. It is urged that every society and each physician, individually, help the country in the War, by investing in Government bonds now and hereafter when offered.

The Campbell-Kenton County Medical Society, however, went further, and in common with many of the other societies as shown in the minutes in this issue, have agreed to help to take care of the families of absent members by giving them a fair proportion of the collections. This is a most important matter and merits, and will receive the serious consideration of every organization in Kentucky.

AT THE BAR OF PUBLIC OPINION.

Under this title, the Propaganda Department of the American Medical Association, has issued a very attractive brochure, telling what some newspaper and magazine editors think of the "patent medicine" business and quackery. This is a collection of quoted opinions from some of the best newspapers and magazines on the subject of the nostrum evil and quackery. Criticisms, coming from sources which might be financially benefitted if they kept silent, are of particular interest.

Copies may be secured at ten cents each from the American Medical Association, Chicago.

SCIENTIFIC EDITORIALS

THE SKIN AS AFFECTED BY CHRONIC SYSTEMIC DISEASES.

In this editorial we wish to refer briefly to some of the more common constitutional conditions in which dermatoses frequently occur. We have chosen this subject in order to impress upon the general practitioner once more the close relationship between the skin and the other organs of the body. We have repeatedly insisted that unless one recognizes the fact that the skin is an organ with important excretory, secretory and protective functions, and with a vast net-work of blood-vessels, capillaries, lymphatics and nerves, unless one is familiar with its reliance upon other organs as well as the reliance of other organs upon it for regulation or compensation, then one cannot appreciate the changes which take place in its tissues *pari passu* with perversion or enfeeblement of the function of other organs.

The dermatoses which we are now referring to may be classified according to etiology somewhat as follows:

(1) Those due to excretion by the cutaneous glands in excessive quantity of substances ordinarily excreted for the most part or altogether by other organs; e.g., the excess of salts in the perspiration during nephritis or excess of urea in uremia.

(2) Dermatoses caused by the presence of an excess of irritating or toxic substances in the blood stream, owing to failure of elimination or to increase in formation; the pruritus of hyperglycemia in diabetes is an example of one type of this, as the urticarias due to intestinal autointoxication or other toxemias are examples of the other type.

(3) Disturbances of nutrition or function through perversions of internal gland secretion, especially seen in diseases of the thyroid.

(4) Hematogenous infection of the skin from foci in tonsils, joints, heart valves, or elsewhere, typified by erythema nodosum during rheumatic infections.

Those constitutional conditions which most frequently result in dermatoses are the cardiovascular and renal group, diabetes, diseases of the liver, derangements of the thyroid or suprarenal glands, and the group of more or less severe septicemias which are usually called rheumatic infections.

In cardiovascular conditions, whether primary or secondary to renal conditions, there is frequently edema of the skin and poor circulation; while this in itself does not usually lead to noticeable symptoms or lesions, still at times it may cause sufficient venous dilation and stasis to interfere with the nutrition of

the tissues in certain localities, giving rise to a lesion which simulates the beginning of a varicose ulcer, but seldom breaks down or shows deep involvement. In the presence of high blood pressure, especially where the pulse pressure is excessive, the vasomotor control of the arterioles is disturbed and there may result one or other of these conditions formerly often grouped under neuro-trophic disorders, such as alternating anemia and hyperemia, hyperidrosis, transient erythemas, telangiectases, ecchymoses, acne rosacea, rhinophyma and other varieties of capillary dilation and hemorrhagic infiltration. Acute parenchymatous nephritis, whether mainly glomerular or tubular, may be the cause of considerable pruritus; although this symptom is more common in the chronic types of nephritis. The effect of the renal diseases on the skin depends largely on the stage and type of renal involvement; where there is much edema the skin will be water-logged and swollen, otherwise it is more apt to become dry, harsh, lusterless and scaling. Small red blotches are frequently seen concomitantly with the latter condition. Owing to diminished renal excretion there is an increase in the amount of salts, urea and other substances in the perspiration, and this may lead to intense itching, as well as to more permanent damage, such as eczema. Eczema appearing for the first time in middle life or later should always render one suspicious of nephritis and a careful urinalysis should always be done. Other dermatoses met with in nephritis are erythemas, due probably to toxemia and local vascular disturbance, especially in the presence of high pulse pressure and urticarias, which would seem to be anaphylactic in origin.

Pruritus is so frequent a symptom of diabetes as to be one of the most frequent causes of the diagnosis of this disease. Kaposi gives the most frequent skin-manifestations in diabetes as follows: (1) pruritus; (2) chronic urticaria, especially the papular form; (3) eczema, particularly of the genitalia on account of the sugar-laden urine on those parts; (4) diabetic paronychia and alopecia; (5) gangrene and ulceration. To this list may be added furunculosis, atrophic changes, such as the thinning and wrinkling of the dry and slightly roughened skin, diabetic bronzing and diabetic xanthoma.

Variations in the secretion of the thyroid gland is known to be the cause of many dermatoses and suspected, with good cause, of being at least partly responsible for even more. Basically, we find an edema-like myxomatous infiltration due to insufficient secretion, that is, myxedema, and a dry, scaling and atrophic condition due to hyperthyroidism, as typified by exophthalmic goitre. Pigmentation, leu-

codermia, atrophic changes in the skin, nails and hair,—these are of not infrequent occurrence. In addition scleroderma, congenital ichthyosis and adiposis dolorosa have been considered by some authorities to be due to disease of the thyroid.

Practically all hepatic conditions in which jaundice occurs are apt to be the cause of pruritus, which may be very slight or most intense. Persistent urticarias, hyperidrosis, furunculosis, cutaneous ecchymoses and slightly elevated bright-yellow or orange spots (xanthelasma) are also frequent accompaniments of jaundice. In amyloid disease of the liver the skin frequently takes on a peculiar milky-white to ashen tint, and is often puffy and edematous; very rarely bronzing in this condition. Atrophic cirrhosis may also show bronzing and edema; the bronzing here is usually more pronounced and is known as hemochromatosis.

The rheumatic affections cause two entirely different kinds of dermatoses. One group is caused by the septic arthritides, etc., and is probably nearly always an actual manifestation of infection of the skin hematogenously by the same coccus that is causing the inflammation in joint, muscle, or other tissue; the lesion thus caused is always, so far as now known, an erythema, sometimes erythema nodosum, sometimes erythema multiforme. The other group consists of dermatoses due to conditions brought about by the rheumatic infection, but not due directly to the rheumatic infection itself, such as the purpuras due to circulatory, trophic or toxic changes and occurring especially over or near the affected joints, itching, caused by long standing chronic rheumatism and formerly considered as manifestations of a uric acid diathesis, and atrophic or senile changes of the skin close to affected joints, apparently caused by disturbance of nutrition through disuse.

This scanty summary of the more common dermatoses due to these few constitutional and systemic conditions named above would be lengthened amazingly were we to include all the rarer forms of skin-diseases which may be due to these conditions, not to mention the **many** other organic or functional disorders which are the basis of changes in the skin. However, we have made our list inclusive enough, we think, to prove our contention that to fail to render the close connection between the skin and all the other organs of the body is not only to fail in the diagnosis of skin diseases, but to handicap oneself in the diagnosis and treatment of the constitutional conditions as well.

M. L. RAVITCH AND S. A. STEINBERG.

TOXIC GOITER.

Since both the medical and surgical treatment of goiter differ so widely, depending upon the type and degree of intoxication, a correct diagnosis is always of primary importance, and greatly simplifies the prognosis and treatment. It is not sufficient to say the patient has a so-called "simple" or an "exophthalmic goiter as was done before we were given a more scientific nomenclature.

Plummer, who has had such extensive clinical experience along this line, divides goiters clinically and pathologically into two main groups: hyperplastic (exophthalmic), and non-hyperplastic (adenomatous). He further divides each of these, clinically, into toxic and atoxic types.

In a majority of goiter cases a diagnosis can be easily and correctly made; in fact some patients diagnose their own condition. In a given case with slight symmetrical enlargement of the neck and symptoms of thyroid intoxication it becomes, frequently, a most difficult task to determine whether the patient has a hyperplastic toxic goiter or a non-hyperplastic toxic goiter, or a combination of the two.

We should not lose sight of the fact that the symptom-complex is not alone due to a diseased thyroid gland, but is associated with changes in other endocrine glands, in the metabolic processes, and in the vegetative nervous systems.

Plummer compares the symptoms of thyroid intoxication to those of an acute alcoholic poisoning such as we see in delirium tremens. He classifies these symptoms according to their severity and frequency in the following order: cerebral stimulation; vasomotor disturbances of the skin; tremors; mental irritability; tachycardia; loss of weight; cardiac insufficiency; exophthalmia; diarrhea; vomiting; mental depression, and finally death. Their frequency and severity depend, of course, upon the degree of intoxication and the length of time the toxin has acted upon the vital organs.

Within the province of such a short article one can not outline the differential diagnosis of the various types of goiter. This becomes so difficult, at times, as to tax the skill of the best trained diagnosticians. We shall consider briefly, the differentiation of the hyperplastic toxic and the non-hyperplastic toxic types, as they are most frequently confused; and, when not recognized, lead to the gravest consequences.

HYPERPLASTIC TOXIC GOITER (GRAVES' DISEASE.)

The onset of symptoms in exophthalmic goiter is relatively acute. A carefully taken history will show periods of acute exacerbations followed by periods of remission. The tendency in most cases is toward a shortening of the period of remission, the exacerbations

becoming more severe and more frequent. Enlargement of the neck occurs at the average age of 32 years, and definite signs of intoxication appear at the average age of 32.9 years. The thyroid gland is usually enlarged symmetrically. However, one lobe may be larger than the other. A distinct bruit is frequently heard over the superior thyroid vessels and occasionally a thrill can be elicited. The gland is soft and elastic and pulsation may be seen and felt. There are always more or less marked cardiovascular changes, the most important of which is the tachycardia. The pulse is usually above 100. It may go much higher under excitement or exertion. Later in the disease, due to intoxication and overstimulation of the heart, there are myocardial changes with cardiac dilatation and insufficiency. Flushed face, profuse sweating, palpitation, alterations in blood pressure, hot flashes and delicate, moist skin are all common symptoms.

The most important eye symptoms are: prominence of the eyeballs; widening of the palpebral fissures (Dalrymple's sign); lagging of the upper lids, (Von Graefe's sign); difficulty in winking (Stelwag's sign); and insufficient convergence. In addition there are such signs as dry glistening cornea; sense of burning and fullness of the eyeballs, etc.

Gastrointestinal symptoms may become so severe as to endanger the patients' life. Vomiting and diarrhea, when not controlled lead rapidly to a fatal termination.

Cerebral stimulation exists in all degrees of variation, depending upon the toxemia. Mental irritability and mental depression are among the most definite evidences of a high grade intoxication.

Loss of strength or muscular weakness, often most marked in the hamstring group of muscles, is very characteristic. The patient complains of inability to climb stairs and tires easily. A majority of cases have fine and rapid tremor. Loss of weight occurs in about the same degree as loss of strength.

NON-HYPERPLASTIC TOXIC GOITER.

It is not surprising that these cases are frequently confused with the type just described when one considers the complexity of symptoms which they so often exhibit. This condition has been erroneously called "simple" goiter. If the term is to be used at all it would be more appropriate in those cases of physiological hypertrophy of the gland occurring in early menstrual life, and during pregnancy.

In non-hyperplastic goiter the toxemia is not due to an over-functioning gland, but to a degenerative process with absorption of the resulting products. The cause of toxemia is constant, hence is not followed by periods of exacerbations and remissions as in the hy-

perplastic type. These cases do not develop a train of symptoms as constant as those of exophthalmic goiter. Secondary changes in the cardio-vascular system predominate.

Plummer has shown that the goiter appears at an average age of 22 years, and symptoms of intoxication at an average of 36.5 years. That 23 per cent. are toxic and 77 per cent. are atoxic. After the onset of the goiter secondary changes occur in the vital organs in about 14 years in the non-hyperplastic type and about three years in the hyperplastic type. Only 23 per cent. are toxic as compared with 99.2 per cent. of the exophthalmic group.

The most constant and severe symptoms are those of myocardial vascular and renal change, which are secondary to the prolonged toxemia. Gastro-intestinal and eye symptoms are usually absent. Nervousness and tremor, when present, are only slight. Other symptoms are relative and vary greatly in intensity.

GUY AUD.

THE TUBERCULOSIS COMMISSION.

For the past four years the State Tuberculosis Commissioners have done all they could to eliminate tuberculosis by sending lecturers, nurses, and the Health Car. throughout the State to teach the people, especially the young and children, the great danger of tuberculosis and how to take care of the infected in hygiene, food and etc., leaving to the family physician the diagnosis and the medicinal treatment. We have also tried to organize Health and Welfare Leagues in every county of the State, in many of these we have been successful, and before another year passes we hope to have every county organized. We have been able to place twenty or more trained nurses in different towns and counties in the State and hope in the course of a few years to have as many as three to six in every county, then and not until then will we be able to begin to see the light. The efficiency of the two nurses (Misses Williamson and Hunt) that have been employed by the commission since its organization has done more to get the county courts and leading ladies and men aroused in the counties where the nurses have been placed than anything else and if we could get one such worker in each county, in another generation the State of Kentucky would head the list of states as having the smallest percentage of tuberculosis in the U. S.

In a few days or weeks the physicians of the State will be called upon to do a tremendous amount of good work. Not only for their State but the United States, the country that each and all of us love so well. Comparatively few of us physicians will be called upon to go to the front, but many thousands of our

young men will be and to send healthy men across the seas to fight our battles for us should be our greatest aim, and we can not do this, if tuberculosis cases are allowed to go. They (soldiers) can not do good work, themselves but will be a great menace to others if allowed to slip through. One case of tuberculosis could cause a thousand or more efficient men to become inefficient in a short time. It is said that France has lost more than a hundred thousand soldiers from this disease alone. Now it is up to us to see that our best and healthiest men go to the front. We know what the results will be if this is done. I don't want to be thought egotistical but think it is nothing but right to give you my experience in the early diagnosis of tuberculosis. *Non-expansion of the apex of the diseased lung is the earliest sign in the disease.*

A physician must be familiar with the expansion of the apex on both sides in the healthy lung before he will be able to differentiate between the disease and healthy side. This is done in this manner: have your patient to stand in front of you in the erect position arms at side, press the fingers of each hand well down above and behind the clavicle, have the patient to take a deep inspiration, and if you have any inflammation in either apex of lung it can be told in this way quicker than any other, I have been using this mode for more than twenty-five years and know whereof I speak, and with other signs of insipient tuberculosis present, a slight fever, morning or evening, a hacking cough in early morning, a slight increase of vocal fremitus, a slight raise of pitch on percussion, remembering always the pitch is higher in normal on the side that is used most. Bronchovesicular respiration. We are nearly always able to make out our case, whether we find the bacillus under the microscope or not, if we do it only confirms our diagnosis.

R. T. YOE.

THE A. M. A. IN NEW YORK.

Another meeting of the A. M. A. has come and gone—the sixty-eighth annual session having been held in New York on June 5th to 7th. New York claims the honor of being the birth-place of the A. M. A. in-as-much as the Medical Society of the State of New York issued a call in 1846 for a conference with the view of discussing the standardization of medical education in the United States, and because this conference a year later in Philadelphia resolved itself into a permanent organization, the present A. M. A. New York was host of the Society in 1853, 1864 and 1880 and then not again until this year, a lapse of thirty-seven years. New York's numerous large hotels well adapts it for the entertain-

ment of such a large body as the American Medical Association. General headquarters, the scientific exhibit and the commercial display as well as several section meetings were at Hotel Astor while other sections convened in the other large neighboring hotels. The attendance this year was unusually large, the official bulletin of June 5th announcing a total registration of 5051 which would mean an attendance approximately 6000 with the last day's registration added. However it was noticeable that of this number over 2000 registered from New York State showing that the attendance from elsewhere was rather disappointing.

The commercial exhibit was not quite up to the standard, some of the "regulars" failing for the first time in years to display their products. Yet when the condition or unrest now prevalent in this country is considered the attendance was not altogether unsatisfactory.

Much interest was manifested in the war during this meeting as was evidenced by patriotic addresses before the house of delegates, special sessions and public patriotic meetings.

Dr. Rupert Blue, president of the Association in his opening address before the society at large said among other things "that his policy since the declaration of war had been to bring the organized medical profession into cooperation with the Federal Government and that a committee from the association had been working with medical officers of the army and navy to this end. In the last two months, he said, the names and residence of 140,000 registered physicians and surgeons and general information concerning them had been collected by the association's committee and turned over to the government. These records, he added, were practically the only material available for mobilizing the medical talent of the country.

Dr. F. R. Green, Secretary of the Council on Health said that to raise the desired army of 500,000 it will probably be necessary for the Government to put 1,500,000 through physical examinations. Then when the 500,000 selected soldiers go into camp thousands of doctors will be needed to attend them. According to prevailing opinion at least seven doctors are needed for every 1,000 men in active service, so the army of 500,000 would require a minimum of 3,500 doctors as soon as it is organized.

Dr. Franklin Martin in his address before the Council of National Defense arraigned the young physicians for their slowness in answering the country's call. He stated that "the unparalleled need for medical men is due to the fact that in this war the death rate, among them has been greater than in any other branch of the service. Though working

miles in the rear of the firing lines, they are at the most dangerous point regarding the risk of wounds and death, for they cannot know at what moment one of those great shells will shatter the base hospital, carrying death alike to doctors, nurses and patients. In one of the recent retreats in France 267 doctors were destroyed in one hour, leaving five thousand wounded men unsuccored on the field. It seemed to be the general opinion of the speakers on medical preparedness that the medical army should be drawn from those already in practice and not from undergraduates of medicine. This will be seen from the report of the committee of Red Cross work in Europe which notes that the experience of European countries has shown the unwisdom of medical students enlisting in line or sanitary organizations, thereby interrupting their medical education and depleting the ranks of future medical officers. A similar tendency has been noted in this country, the report continued, "and in order to guard against a possible shortage the Medical Board of the Council of National Defense on April 23rd, declared it to be the patriotic duty of even pre-medical students to remain under instruction until the country can avail itself of their trained services."

On the night of the second day of the New York session a patriotic rally was tendered the members of the Association and their guests at the Hippodrome with ex-President Roosevelt as the principal speaker and with music by Sousa and patriotic songs by Madam Alda of the Metropolitan Opera Company. The war spirit was further in evidence in New York by curtain speeches in all of the theatres in the interest of Liberty Loan bonds, parades of army and navy divisions through the streets and aeroplanes soaring above the city distributing liberty bond literature. As a special feature of the New York meeting the committee of arrangements schedules clinics at the various hospitals on the two days prior to the meeting, all of the specialties being represented. While this evidently attracted many members to the meeting the writer heard many expressions of disappointment owing to poor management and was himself disappointed in three instances, when after securing tickets and hunting up the clinics the operators failed to put in their appearance.

The eye and ear sessions as usual were well attended this year. The papers read before the eye session was diversified and presented nothing out of the ordinary.

The otological section devoted much of its time to the discussion of vertigo and its causes and significance. Dr. J. H. Jones of Philadelphia again gave lantern demonstrations (moving pictures) in reviewing the various conditions that produce vertigo. He pointed out the great value of the tests of labyrinthian

function not only in the diagnosis of ear conditions but also in obscure neurologic cases.

The Association elected Arthur D. Bevan, of Chicago, as its next president, a deserving compliment to a highly efficient, modest member of the profession. The selection of Chicago as the next place of meeting seemed to meet with favor. ADOLPH O. PFINGST.

OFFICIAL ANNOUNCEMENTS

PRELIMINARY SUBJECT PROGRAM OF THE SIXTY-SEVENTH ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL ASSOCIATION, TO BE HELD AT ASHLAND, KENTUCKY.

WEDNESDAY 10 A. M.—SCIENTIFIC SESSION.

1. Gall-bladder Infection.
2. Gall-bladder Surgery.
3. The Hyper-acid Stomach.
4. Dysentery.

SPECIAL ORDER AT 12, NOON.

Oration in Medicine.

WEDNESDAY, 2 P. M.

1. Fractures about the Elbow Joint.
2. Puerperal Eclampsia.
3. Hyperemesis Gravidarum.
4. Nitrous-oxid Anesthesia in Obstetrics.
5. Early Diagnosis and Treatment of Ectopic Gestation.

THURSDAY, 9 A. M.

1. The Diagnosis and Treatment of Trachoma.
2. The Sluder-Beck method of removing Tonsils.
3. Treatment of Colds.
4. Treatment other than Medicine for Cardiac Disease.
5. Relax Sacro-iliac Joint—its Treatment.

SPECIAL ORDER AT 12, NOON.

Oration in Surgery.

THURSDAY, 2 P. M.

SYMPOSIUM ON CANCER

1. The Pre-cancerous State.
2. Cancer of the Stomach.
3. Cancer of the Cecum.
4. Cancer of the Uterus.
5. Tumors of the Mammary Glands and the X-ray as an Adjunct to the Post Operative Treatment of Cancer.

1. Sanitation in the Neighborhood of Military Camps.

2. Care of the Sick Soldier.
3. Treatment of wounds by the Dakin-Carrell Method.

FRIDAY, 9 A. M.

1. Gunshot Wounds of the Abdomen.
2. The Experience of the State Board of Pharmacy under the Harrison Law.

ORIGINAL ARTICLES

RECRUITING FOR THE MILITARY SERVICE.*

By FRANK THOMAS WOODBURY, M. D.,
Major Medical Corps, U. S. A.

When I responded affirmatively to the request to prepare a paper for the audience of this association I felt that among the many specialties which are practiced by civilian and military physicians alike, very few possess peculiarly military aspects not already known to the civilian physician unless we enter into administration and tactics.

We are all sufficiently well posted to know that military practice is but civil practice with a uniform on and in a controlled and very law-abiding community. Military surgery finds its counterpart in the accidents of industrial and metropolitan life. Military medicine in well appointed posts or general hospitals is the same as in cities and towns. Military sanitation is the counterpart of sanitation of urban and rural communities save that we know a stricter obedience to the letter and spirit of the law. The military surgeon is also obstetrician, pediatricist, ophthalmologist, alienist, as the occasion calls for his diagnosis and treatment.

There is one specialty which is practiced by the military, and the naval surgeon as well, whose homologue is known in part to the medical examiner for life insurance and to some extent I believe by railway surgeons. It might be called physical diagnosis of the normal. Even in medical schools it is rare during the course of instruction in physical diagnosis for the student to see a sufficient number, if indeed he sees any, normal, physical specimens of men, women, and children upon which to base his ideas of what constitutes normality. A judgment of normality, as of disease, must be based upon a composite picture of many variations.

I feel that my own experience in college gave me the same diagnostic ability of the well-known person who knew two diseases, one was smallpox and the other was not. I learned by anamnesis, symptoms, signs, and laboratory findings to recognize disease. I was left to discover of my own acumen that when a person had none of these pathognomonic indications there was but one conclusion left—that not being sick he must be well. Being well he needed not a physician; possibly an osteopath or a follower of Mrs. Eddy, or maybe a little discipline. Studies in malingering were not pursued except in medical jurisprudence as but few cases, if any, pre-

sented themselves for demonstration to the class.

In the military service, however, the doctor must be ever on the alert for malingering which is the most difficult of conditions to substantiate by adequate testimony, at the same time being extremely careful that he does no injustice to the individual; and he is also called upon to exercise the great responsibility of selecting men for the military service. I have therefore, decided to discuss with you the subject of recruiting for the military service.

If we consider the military body as a physiologic entity we immediately perceive that it has members whose structures vary directly as their functions and that these members are made up of units, the soldier; of which the officer is a specialized variant. Biologically speaking, the soldier is the unit of military structure and function. Upon his integrity and fitness depend the integrity and efficiency of the military body.

In the animal body the individual cell has no choice as to whether it develops into a connective tissue cell or a digestive cell but in the military body the soldier may choose, within certain limitations depending upon his own fitness, whether he will become an infantryman or a quartermaster-corpsman, for example. The military surgeon when acting as recruiting officer must bear in mind the functions of the branch of the service for which the recruit desires to enlist and the fitness of the application to perform those functions.

The function determines the standard. This might be considered almost a military axiom and be used to group our ideas and, as I shall suggest later on, may allow of classification for auxiliary duties which are created out of the needs of actual hostilities.

Aside from certain legal, social, moral, and intellectual requirements which we will not consider here the Adjutant General's circular on recruiting says: "Applicants for first enlistment must be between 18 and 35 years of age, of temperate habits, able-bodied and free from disease" and further specifies the minimum height to be 64 inches and the maximum weight to be 190 pounds for Infantry, Coast Artillery, and Engineers. For Cavalry the same minimum height and a maximum height of 70 inches and a maximum weight of 165 pounds. For Field Artillery the same minimum height and a maximum of 72 inches and a maximum weight of 190 pounds with a special minimum height for mountain batteries of 68 inches. The minimum weight for all branches is 128 pounds. Exceptions are made only under special circumstances and for cogent reasons, only permitting a minimum weight of 120 pounds upon the sole authority of The Adjutant General of the Army.

*Reprint from the Proceedings of the Medical Association of the Isthmian Canal Zone.

Generally speaking, the Infantryman must have well-formed, well-arched, elastic, and strong feet. He must be well muscled and supple; neither adipose nor lean. He must have excellent heart and lungs in a capacious chest to supply him in his exertions; a good frame to carry his pack, a good eye to sight his rifle, a good ear to hear the enemy patrol, good teeth to chew and good digestion to assimilate his plain but nourishing rations. He must be intelligent and have the stamina of manhood in its prime to bear with triumphant fortitude the hardships of service, neither inclining to the tenderness of youth nor yet the submission of age. He must not be so tall as to be a burden to himself nor yet so short as to be unable to bear his portion of the company duties.

The cavalryman need not have the frame and musculature of the infantryman nor be so tall nor so heavy, nor does he need such perfect feet and legs. His horse carries him and his pack and he is already aloft. He needs suppleness of the waist and strength of arm. While he may fight in rencontre melee he usually fights on foot in positions consecutively distant, whither he rides, and in formations usually near where his horse is stationed. He needs a keen eye and ear for scouting and patrols and he may be of younger age than the infantryman as his service calls for dash and reckless daring in swift action which is ever the delight of youth.

The field artilleryman combines the functions of the foot and mounted troops according to whether he serves with a mountain or a light battery.

The coast artilleryman leads a more sedentary life than the preceding. His duties are laborious but they are performed amid surroundings and under circumstances akin to many vocations in civil life. He is not exposed to the hardships of short rations nor required to endure the rigors of inclement weather continuously without sufficient shelter or dry clothing nor is he required to undergo forced marches as a preliminary to personal combat with the foe. He must have a well-built frame, of good height, and well muscled. He need not be so agile and except under certain circumstances where men are selected for special duties he does not need keen vision nor hearing; indeed if he has the latter the concussion of big guns firing will soon render him hard of hearing. He must not be a stripling nor yet so old as to be incapable of training himself to his special duties.

The aviator requires excellent vision and hearing, a sound heart and lungs, resilient arteries, mental poise combined with supreme courage and daring to enable him to undergo the great barometric and meteorologic changes in his flights and maneuver his plane and his

guns amid the clouds, or drop bombs or act as aerial eye scanning the enemy's movements.

The other staff corps must conform to a general standard of physical excellence with some variations for special duties. Thus we have the Hospital Corps, the Quartermaster Corps, and the Ordnance Department, each with specialized work to do and much of it military in form only, but not differing in essence from similar duties of civil life.

In considering the physical requirements for enlistment I have thought it would be more interesting if instead of quoting the bare standards laid down by orders and regulations I should rather invited you to examine with me in imagination a candidate for enlistment referring to variations and disqualifications as we proceed.

The applicant presents himself at the recruiting office of some town or city and is interrogated and examined physically by a line officer who has had a period of instruction at a recruit depot. His examination weeds out a great number of ineligible. As might be supposed he can not play the part of a physician to perfection and hence many disabilities get by him. Again, in a desire to make a record he may disregard or take a chance in doubtful cases. I say nothing as to carelessness. Notwithstanding care, this system costs the Government a certain amount yearly for expenses of men accepted at recruiting stations and rejected at recruiting depots. For this reason I venture the personal opinion that recruiting should be entirely conducted by medical officers.

As we proceed in our imaginary examination I believe you will agree with me that the proposed creation of recruiting officers from postmasters which will necessitate physical examinations by civilian physicians will not be much more satisfactory if not actually a shadow of the substance when recruiting is stimulated by actual war. The applicant on arriving at the recruit depot is given a bath and after breakfast of the following morning he comes to the examining room in the depot hospital.

He is presented to us stripped to the skin in a good light. We note at once personal cleanliness, discolorations, diseases, or other conditions of the skin, the outline of the body, its proportions and posture. We note deformities, swellings, obesity, or leanness, fragility or sturdiness, immaturity and evidences of inward conditions as scars, lumps, depressions, asymmetry, and mental traits as intelligence or stupidity, silliness, loquacity, tactiturnity, alcoholism, and drug addiction.

The above observations are made in a general survey while the applicant is being weighed, measured as to height and chest circumference, and is having his mouth examined for missing and defective teeth.

We now stand the applicant directly in front of us and while passing the hands over the head in search of parasites and other diseases of the scalp, scars, depressions or lumps, asymmetry of the skull, malformation or loss of the ears, enlarged glands, or goiter or mumps we ask "Have you ever been struck or injured on the head, been knocked unconscious, had fits or fainting spells, do you use alcohol, tobacco, or other drugs?" We examine the face while he is replying, for gross ocular variations such as shrunken eyeball, strabismus, nystagmus, ptosis, exophthalmos, cataract, leucomata, epiphora, entropion, and ectropion and granular lids; the nose for deformities, rhynophyma, aene rosacea, lupus, and scars. The mouth is examined for harelip and cleft palate, deforming scars, caries of the jaws or ankylosis of the temporo-maxillary joint, and the ears for loss of pinna, atresia, or evidences of operations or disease.

The head and face should be symmetrical. Any unsightly scars, discolored marks, tumors, or marked ugliness which though not the evidence of active or latent disease are cause for rejection as such bring unpleasant notoriety to the man and are, therefore, subversive of discipline. The throat is scanned for goiter, bronchial cysts, or fistulae, enlarged glands, aneurysms, and scars. The chest is then inspected for asymmetry, deformities such as pigeon and funnel breast, mammary development, and all evidences of operations, accidents, or disease of skin, chest, wall, or lungs.

We examine the thoracic organs by the usual diagnostic methods, meanwhile asking the man if he has ever had a persistent cough, spat up blood, had lung fever or rheumatism or sore throat and whether any of his family died or are sick with consumption. The X-ray or the microscope may be called in to decide questions of doubt.

The abdomen is examined for prominence or depression, herniae, scars or wounds or operations, adiposity and varicosity.

The genitals are then examined for hernia, hydrocele, epididymitis, or orchitis, absence of or undescended testicle, loss of or absence or deformity of the penis as epispadias or hypospadias and scars or other evidence of venereal disease, meanwhile asking him if he has ever had clap or a sore on the penis, been ruptured, has trouble in passing water or wets the bed at night. We confirm or disprove statements by signs observed. In suspicious cases we examine microscopically a urethral smear and inquire as to recent exposure to venereal disease.

We next inspect the legs for deformities such as genu valgum and genu varum, saber shanks, exostoses, or eecchondroses, joint swellings, scars, ulcers, eruptions, or other evidences of disease. The feet then require

especial attention to discover clubfoot, flat-foot, hallux valgus, hammer toes, polydactylism, or missing toes, webfoot, ingrown toenails, bunions, corns, Morton's toe and bromidrosis; also evidences of injuries.

We now turn the applicant around with his back toward us and running the hands down over the scalp, down over the neck, over the shoulders and down the arms we examine for enlarged post cervical and epitrochlear glands, supernumerary or cervical rib and deformity of the shoulder girdle and arms and confirm previous examinations of head and ears.

We cause the applicant to stand squarely with heels as nearly together as his conformation will permit and inspect for scoliosis, kyphosis, prominent hip joints, short leg, varicose veins, scars, or skin diseases.

He then is required to lift up one foot and then the other to exhibit the soles to show callosities, flat foot, scars, or other conditions and then is required to lean over with the feet spread and asked to pull the buttocks apart with both hands to permit inspection for spina bifida, hemorrhoids, fistula, condylomata, evidence of sodomy, and scars of operations or accidents or disease.

The applicant is again made to face us and required to stand on the toes, extend both arms, flex all the joints, and the hands are examined for strength of grip and pull of the right index finger, for missing or supernumerary fingers, sprains, stiffness, wasting or deforming scars and evidence of injury. At this time he is asked if he ever had a broken bone, a joint out of place or stiff, or an operation of any kind. This is precautionary as it may lead to special examination of scars or joints.

We now put the applicant through a set series of exercises tending to disclose weakness, stiffness, awkwardness and heart murmurs as well as respiratory power, by various calisthenics and movements ending in hopping entirely around the room on the toes of one foot and then the other, following which he is laid on a table and the heart and lung sound are auscultated and previous findings compared or confirmed. The belly is again examined by palpation and hernia confirmed. Knee jerks and other evidences of nervous conditions are inquired into.

We now send our applicant into the eye room where another medical officer takes up the examination of the vision with the Snellen cards and hearing by a voice test at 20 feet. He is then taken into a dark room and the eyes are examined by reflected light and the ophthalmoscope and retinoscope if conditions call for it. The nose cavities are examined for polyps, deflected septum, synechiae, rhinitis, oxena, and perforation of the septum. The mouth is examined to see the posterior nares, the pharynx, and the openings of the eustach-

ian tubes, the larynx to disclose cause for voice changes or cough if any, the tonsils, the teeth, the buccal mucous membrane and the tongue and floor of the mouth.

All doubtful or unusual features are given special attention and refractive errors are corrected, if not due to disease. The applicant is now tested as to color sense, reading, and writing. During the course of our examination of a number of recruits, each one has had an identifying photograph taken, his finger prints impressed and identifying bodily marks indicated on an outline figure on his identification card. This is extremely important as it affords the most reliable means of identifying him should he at any time during his subsequent service be found delirious, unconscious, or dead, and identification by the features or clothing be impossible. It is also a perfect identification of deserters or of men fraudulently reenlisting under assumed names. His enlistment papers have also been completed by the clerical force and are ready for comparison and signature by the enlisting officer as soon as the recruit has taken the oath and signed it. The recruit is now ready to have explained to him the nature of fraudulent enlistment and the penalty therefor, the term and nature of his enlistment and any last questions answered before finally taking the oath of enlistment. If he had any abnormalities he has been examined again by a third medical officer to decide in doubtful cases and if found disqualified he is rejected and not permitted to enlist. An accurate record of all the points noted during the physical examination has been kept on a card which is filed in the office of the medical officer who enlists, to prevent subsequent questions to arise unanswered as to the facts in the case. After enlistment the applicant is given his first inoculation of the typhoid prophylactic in the right arm and vaccinated on the left.

If our office force has been properly organized according to the accepted plan we should be able to begin at 7:45 a. m. with 80 recruits and send them to their dinner at 12:30 ready to draw clothing and be assigned to their organizations before 3 p. m. Our enlistment papers will have been compared, especially the identification records to see that they are correct in every particular and signed and mailed to The Adjutant General in the afternoon by mail.

The scheme of examination which we have just pursued is the skeleton upon which we build our judgment and does not vary much from the usual diagnostic procedures except that the applicant is often striving to conceal disabilities while our patients often complain of more disabilities than their physical signs and symptoms can account for.

Sometimes when an applicant changes his

mind or has come up for the railroad fare or wants to get a ticket back to the place where he made application, he will feign disabilities or give excessive histories of past imaginary illness or accidents. Such always betray themselves though often requiring some patience and skill to discover.

Let us now repeat our journey in imagination and fill in the outline just made.

A low forehead and prognathous chin though giving an animal expression and often the evidence of low intellectual development may be present in very good soldiers of the colored race. A high dome-shaped head or a broad flat skull do not give extremes of mental condition nor does the flat occiput merging into the vertebral line which is so constant a sign of Mongolian idiocy always mean mental feebleness in the adult, other signs of degeneracy being lacking.

A certain amount of asymmetry of the face may be attended by a very clear mind remembering, of course, that it must not be progressive and, therefore, indicative of pituitary and thyroid changes. The play of the features and expression give token often of the mental degree or of aural trouble or ignorance, in a foreigner, of the spoken commands, and when asymmetrical, of facial palsies.

The so-called stigma of degeneration must be determined only from the completed picture formed from the entire examination. Isolated instances of abnormal conditions are insufficient and may lead to a totally wrong conclusion if used as criteria.

In considering what might be called, for lack of a better term, the degree of vital stamina as evidenced by the relation of the respiratory function to the bodily development we have arrived at a table of standard relations between height, weight, and chest capacity measured in inches of circumference at the nipple level.

Height in inches.	Weight in pounds.	Chest circumference at expiration.		Minimum allowed.
		Lbs. less	Inches	In. less
64	128	8	32	2
65 ¹	130	8	32	2
66	132	8	32½	2
67	134	8	33	2
68	141	12	33¼	2
69 ²	148	15	33½	2
70	155	20	34¼	2
71	162	20	34¾	2
72	169	20	34¾	2
73	176	20	35½	2

1. Two pounds to the inch. 2. Seven pounds to the inch.

With boys the minimum may represent an over-development of one below 18 years of age. I have seen boys of 16 with the bodily development of a boy of 20 and vice versa, being an

evidence of personal variation from the standard not due to ill-health or undernourishment in the latter case.

In weighing the evidence as to chest capacity, if disease or constricting scars are eliminated, we must consider the muscular development present, the muscular development possible with training, judged by the framework and general evidence of health as well as the degree of maturity displayed.

Many young fellows under proper training, regular living, and abundant good food show a remarkable degree of development during the period of training, about four weeks, at the recruit depot.

The cardio-vascular signs with recruits are at times more puzzling than with patients since they show heart lesions in their beginning stages when hemic murmurs and valvular murmurs simulate each other and secondary signs of hypertrophy, dilatation, and respiratory are wanting. Our applicant may have to be kept under observation in bed and again after exertion to decide. As a general rule all murmurs not transmitted, not attended by heart muscle changes or pulse alteration and without respiratory embarrassment or other sign of vascular stasis may be accepted as functional.

I do not believe in temporary displacement of the apex beat by gastric or colonic gas. I have never seen such a condition.

Murmurs vary most wonderfully. I have heard some which were almost audible without auscultation which had no significance and which disappeared after 30 days of military life. On the other hand a murmur that seemed to be functional proved by sudden respiratory embarrassment and fainting at drill to be valvular, the result of a fever of unknown description and remote history.

I well remember being deceived by the following combination; a blowing, sawing, systolic murmur heard at the sternal notch and transmitted to the cervical vessel, a difference of 10 mm. in blood pressure between the two arms and no radial pulse in the left wrist. The applicant had a slight dry cough but was otherwise apparently very well. Syphilis was denied. A few days rest in bed in the ward cured the cough and lessened the murmur. A sphygmomanometer gave equal readings in the two arms and the pulse lost in the radial appeared as an abnormal superficialis volæ which had taken the place of a rudimental radial. So vanished a beautiful aneurysm.

Sometime ago I noticed that Sir James Mackenzie had written instructions for recruiting officers, for publication by the British War Office. I have just received the circular today and, as it is apropos, I will read it

“At the request of the War Office, Sir James Mackenzie has drawn up the following Memorandum to serve as a guide to Medical Examiners of Recruits.

The Significance of Abnormal Signs in the Recruit's Heart.

It should be understood that the healthy heart in the young can exhibit murmurs, and variations in rate and rhythm, which are perfectly physiological in origin and indicative neither of disease nor of impairment.

The Functional Efficiency of the Heart.

Before examining the heart, find out the functional efficiency by ascertaining how it responds to effort. This is shown by finding out the amount of exertion the candidate has been accustomed to take in the past in his work or play and if he can undergo severe bodily exertion without distress.

Murmurs.

The physiological murmurs are always systolic in time, and the situation of the greatest intensity may be at the apex, midsternum, or base of the heart. If the candidate's response to effort be normal, and the heart normal in size the murmur is negligible, for it is manifest that, if the cause which produces the murmur hampers or embarrasses the heart in its work, the size of the embarrassed chamber will increase and its functional efficiency be impaired.

Irregularities of the Heart.

There are only two forms of irregularities that need be considered. Irregularities indicating serious mischief will be associated with such diminution of the functional efficiency that the candidate would not seek to recruit, such as the irregularity of auricular fibrillation or of heart block.

Youthful Type of Irregularity.

The most common irregularity is that which occurs in the healthy heart of the young. It is characterized by a lengthening and shortening of the pauses between the beats; it will often be found to vary with the respiration, the beat increasing in rate during inspiration and decreasing during expiration. When it does not have the characteristic respiratory character it can be made to take on the character by getting the candidate to breathe slowly and deeply for a few minutes. It is frequent in perfectly healthy hearts, and is, therefore, of no importance and candidates should not be rejected on account of its presence.

Extra Systoles.

In rare cases the pulse may be found intermitting more or less frequently. If the heart be auscultated, two sharp sounds rapidly following one on the other may be heard during the pause. If this is the only sign present, i. e., if the functional efficiency of the heart be good and the size nor-

mal, then these extra systoles are of no significance and the candidate should not be rejected.

The Effect of Excitement.

Many candidates whose hearts are perfectly healthy, suffer from palpitation or excited action of the heart during examination. The beat becomes forcible and rapid and a systolic murmur may be present. If such a candidate be told to lie down and breathe slowly and deeply for a few minutes, the heart's action becomes less violent, and the rate slows during expiration. With a history of good functional efficiency, the candidate may be considered suitable for enlistment."

Tachycardia and arrhythmia are to a certain extent relative terms. Only when they are pronounced, continuous under varying conditions for several days and accompanied with other symptoms of nervous nature can they be considered of sufficient importance to disqualify. Poor physique from exposure, poor food, or recent illness, the use of tobacco and alcohol or other drugs as well as intrinsic cardiac disease compete with hysterical and emotional states as causes. From these the transient and remedial must be sorted which will be expected to revert to the normal in the military service.

Examination of some fifteen thousand recruits has given me a different idea of the sounds of respiration. The so-called bronchial breathing is by itself a sign of nothing. I have heard many such which mimicked the sound of lobar pneumonia without the other signs such as ægophony, pectoriloquy, and adjacent tympany; in applicants in every respect normal. Again the signs of apical tuberculosis appear without disease, at times. I have held men over for microscopic and X-ray corroboration only to find it negative and their temperature normal while on the other hand I have passed over the lung sounds only to have my suspicions aroused by a hectic flush, a slight cough, and respiratory embarrassment during exercises which were confirmed by thermometer, microscope, and X-ray.

Deformities of collarbone, scapula, or rib due to active disease or old injuries or disease which would interfere with the ability to shoulder a rifle or carry a pack or throw a bomb or hand grenade or which are noticeable when clothed, disqualify. I have seen some ten or eleven supernumerary or cervical ribs and never noted the arm symptoms of muscular wasting and neuritis mentioned in the surgical textbooks. Old ununited fractures of the ribs disqualify.

In examinations of the abdomen and its contents a faulty posture of the body may simulate enteroptosis, gastropptosis, or enlarged spleen, especially in persons of spare figure or suffering from uncinariasis or other intestinal parasites. Excessive gas, tenderness on pressure or when taking a full breath, capillary

engorgement combined with other symptoms of digestive derangement as sallow, muddy skin, bad breath, and emaciation or mere underweight, as well as suspicious lumps or liquid in stool call for further observation to determine the presence of parasites, gastric, or intestinal disease or nervous conditions. Prominent belly a part of general obesity is permissible if the obesity does not disqualify but an enlarged belly from whatever cause accompanied by sparseness or emaciation of the body is suspicious and disqualifies.

Recent scars of operations or from accidents disqualify as not enough time has elapsed to determine what they will do. So also do thin scars with beginning or marked herniæ. Old firm scars not attended with obstructive adhesions giving symptoms are permissible if they are not extensive, tending to weaken the muscular effort of the abdominal wall, or sensitive.

The size of the penis varies remarkably and without reference to the general development. Signs of thickening of the foreskin with a turgescence between erection and flaccidity in boys may give the suspicion of masturbation. Hermaphoriditis, absence and loss of the penis, epispadias and hypospadias, when the opening is very small or so far back as to prevent the normal direction of the stream of urine, and phimosis preventing uncovering of the glans are all disqualifying.

Simple encysted hydrocele and varicoceles when unaccompanied by subjective symptoms do not disqualify. Herniæ, atrophy or loss of both testicles and undescended testicle which is incarcerated in the inguinal canal or lies just against the pubis disqualify.

Such a condition as three testicles I have never seen though such have been diagnosed by line officers at recruiting stations. It is due to an accompanying encysted hydrocele and is without significance. I have seen several such. I have also seen an encysted hydrocele of the tunica vaginalis posing for the testicle which was found as a tender lump in the inguinal canal. I remember one case in which the testicle was undescended, remaining in the abdominal cavity while it was represented by an encysted hydrocele in the inguinal canal. My recollection is that the majority of these anomalies were on the right side. An epiplocele at the inner ring may also simulate an undescended testicle in the abdomen.

Hemorrhoids without symptoms and small unirritating fissures of the anus do not disqualify as they are easily remedial. Any other disease or deformities about the perineum disqualify.

Scoliosis and short leg, unnoticeable when the man is clothed, do not disqualify but kyphosis or caries or stiffness of the spine not due to lumbago disqualify.

The feet must be strong and well arched without disabling troubles as hallux valgus and bunions, corns, hammer toes, or over-riding toes which cause pain. The colored race is almost plantigrade normally, however, and with prominent heels. I did hear of a certain medical officer, new to the service, who stirred up a number of applications for discharge for flat foot among a colored regiment as he thought he had discovered many cases, only to receive enlightenment from the post surgeon.

All unusual conditions of the legs as to joint or bones must be judged in the light of the requirements of the military service. The same applies to the upper extremities. Loss of the thumb and great toe, loss of any two toes on the same foot or any finger except the little finger; loss of the last two phalanges or two fingers on the same hand or of more than one phalanx of the right index (trigger finger), ankylosis in any position of the second and third joints of fingers and toes and webbed fingers and toes disqualify.

Exostoses, enchondromata, subluxations, loss of the carrying angle of the elbow, very large hands or feet out of proportion to the body disqualify.

Ataxic gait and stiffness in joint movements disqualify, remembering that young applicants and those from the country are often awkward and clumsy in movement. Sometimes recent trivial accidents with contusions or slight sprains which are not permanent simulate permanent disabilities.

Nervous disorders give evidence during the examination by tremors, weakness, wasting, inability to perform certain of the exercises, and altered reflexes. I remember once examining a soldier with Lieutenant Colonel Snyder who had been sent to the hospital because of weak legs and inability to keep up with his company. Examination and inquiry developed that he had been discharged from the Navy on a medical survey by reason of sequelæ of an attack of epidemic cerebrospinal meningitis. Colonel Snyder will no doubt recall that the man had been treated by his brother who was a naval surgeon and whose report of the case appeared in an article in the *Journal of the American Medical Association*, a copy of which lay at that time on his desk.

Whenever the trained eye of the examining surgeon notes any unusual sign, no matter how trivial, he pursues it with all the agents at his command. This sometimes brings to light conditions which had been concealed by the applicant or which had escaped his previous investigation.

Occasionally an epileptic has obligingly demonstrated a fit during the course of the examination, otherwise, unless he has shown a bitten tongue or lips, many old and new bruises and a marked pasty putty colored

cast of skin and a certain dullness of expression, the condition would have been unnoticed.

The age of the applicant is of interest, because boys under 18 years of age can not be enlisted and, if under 21 years, must have the written consent of father, only surviving parent, or legal guardian.

Many boys run away from home and try to pose as 21 years of age. This is sometimes difficult to decide as great disparity between age and development is most marked at this period of life. Precocity and retarded development appear side by side before the eyes of the puzzled examiner. He must decide first upon development. No matter what the age, if the body be immature, it will not bear the strain of the military service. The evidences of maturity are a well-formed musculature which has replaced the smooth rounded outlines of childhood, wisdom teeth sometimes, hair on the face, the axillæ, the pubis and genitals extending up on the abdomen and about the anus, testicles well formed and the penis and scrotum darker than the adjacent skin and the scrotum ruga; the voice deepened and usually a certain air of self-reliance and manliness. Next a close questioning as to who signed the minor's consent, whether he has not run away from home, how will his mother feel about it, combined with a clear explanation of the penalties of fraudulent enlistment and the certainty of his being found out, often break down the inposition and clarify an otherwise difficult situation.

The behavior of the applicant during the course of the examination is an excellent guide to his mental condition and often to malingering and fraud. Volubility is always a cause for further observation for insanity. Stupidity, taciturnity, apathy, sullenness, dullness, silliness, reasonless mirth, excessive friendliness, or undue intimacy or all indications of disordered mentality, and call for further observation in the quiet of the hospital ward. Sometimes an apparent stupidity is due to ignorance of the English language in foreigners or to deafness. A filthy body, with parasites, a disordered dress worn with untidy carelessness, a skin marked by scabies, all evidence mental deterioration though occasionally a man may be unfortunate; in which case he shows some personal pride and intelligence.

As to the organs of special sense; vision under 20-40ths in the right eye and 20-100ths in the left disqualify and if better than that must be due to errors of refraction only and be correctible with proper lenses. The hospital corps and ordinance department may have vision of 20-70ths in both eyes correctible to 20-40ths with proper lenses and not due to disease. A blind eye or exophthalmos

or trachoma or epiphora from disease of the lids or lachrymal apparatus disqualify.

Sometimes a man may simulate blindness in order to be rejected and get transportation to his home town, having changed his mind. This is discovered by the usual tests of prisms, high numbered lenses, and the red and green letter card with glasses of red and green color.

Color blindness disqualifies for the signal corps, the aviation corps, and any position requiring color perception.

I may here interpolate a report of an example of malingering recently brought to my attention.

A soldier who had been detailed to decorate the interior of the Post Exchange moving picture theater came to me and said another soldier had criticised his shadows as being too blue, also he complained of noticing a recent difficulty in distinguishing shades. I examined the man for reading by Snellen's cards, and went over to see his painting which I considered showed great merit in composition, drawing, and harmonious blending of colors. He denied having been found color blind on enlistment. I felt a little doubtful but advised dark glasses. Very soon afterwards I learned that he had done about one-half a day's work in the last ten in painting but had been doing black and white work for a book which was paying him extra money; as I had no color test skeins and to avoid a hasty decision I sent him to Doctor Reeder with a note. Doctor Reeder reported him as being an excellent example of congenital green blindness. I advised the man to go on painting as his work had been satisfactory and I saw no reason why it should not continue so. I called Doctor Reeder on the telephone and asked if he was prepared to testify on oath that the soldier was color blind or malingering, as the question had been raised and we desired to clear the man of the imputation. He said that phase of the subject had not occurred to him and he would like to see the man again. We are both agreed, however, that under either circumstance he can and should go on painting.

The distinction between trachoma and simple granular lids is frequently difficult to make in the border line cases. Personally I believe them to be only different stages of the same condition. When the source of irritation and the bad environment are exchanged for a hygienic life and constant care of the surgeons the condition frequently clears up very promptly. Indeed this is one way of coming to a decision. The suspect is held for several days during which time he receives appropriate treatment. If the condition improves he is enlisted.

Anosmia and active nasal disease, especially of the chronic type, obstructions of one nostril from any cause and loss of the nose disqualify. Old healed lesions not due to syphilis and not causing symptoms do not dis-

qualify. All diseases of the mouth and gums as pyorrhea alveolaris, tonsillitis, ulcers, and suspicious sores or warts about the lips and excessive loss of teeth preventing proper mastication of food reject. Laryngeal changes due to paralysis or active disease which is not transient and remediable within reasonable time, reject.

In time of peace under a volunteer system of recruiting the War department competes in the labor market with other employers and can afford to a certain extent to be particular in its selection. But in time of war when the fighting machine should be at its maximum strength and efficiency the urgent necessity compels us to lower the standards and admit to the army men not physically fit and who are in addition untrained. Imagine if you can a baseball manager being particular in the winter time and then filling up his team while the audience fills the bleachers with any one whom he can get under offer of bounties or threat of conscription. Who would not think him insane? Yet that is the attitude of the national mind as expressed in our laws and regulations.

Another serious fallacy exemplified in our past history is that mental attitude with which volunteers flock to enlist. "Come on, Harry and Frank, join our company. Bill's going to be captain and I am to be lieutenant." With the same degree of reckless irresponsibility they observe all the movements of military service and every defective who couldn't march with his company on account of a bunion or who had a suppurating bubo or chronic constipation returns with a sick leave and is welcomed at the station with the village band and the school children in white dresses and flags and an address on "Our Heroes" by the Mayor or a local representative. Later on the village lawyer, sniffing fees, busies himself with pension claims. "Everybody's getting a pension and you're entitled to one just as much as the rest," he says. Thus he stills the voice of patriotism in the siren song of greed.

I am firmly convinced that when the day arrives on which the American people in Congress assembled shall decide by legal enactment that military duty shall be an equal obligation with jury duty on all citizens it will be the greatest advancement made by the people since the Declaration of Independence was signed. My reasons are founded in medical experience.

First and foremost it would take the youth when his body is trainable and his mind plastic. It would develop both in highest degree. It would bring his body to a physical maximum of efficiency. It would fix habits of correct living. It would bring about the correction of bodily defects in their early stages

when the greatest amount of correction might be expected and make the most of limited possibilities by appropriate training.

It would train the mind in habits of self-restraint and obedience to authority which would make him respectful of the laws of health and of the community. It would teach him truthfulness, honesty, self-reliance, self-respect, cooperation, the meaning of service, and the feeling of true patriotism. It would take possession of the idle hours of the incipient criminal and law breaker and fill them with legitimate occupation and training which would awaken new ambitions and break up evil associations; a result not yet attained by our school system. This would help in the solution of our present great civic problems; the criminal and the unemployed. A great German teacher said "What you wish to see in the laws you must teach in the schools."

Second, it would bring about an annual physical examination of the citizen soldiers whereby the latent and unrecognized troubles would be discovered and estimated when they could be studied and treated before the individual became an invalid or died a sudden death.

Third, it would extend our classification to include a large number of those who are rejected from military service but who are not actually ill who might be used in appropriate positions in the military service which do not call for service in the ranks.

All the office duties, munitions making, cooking, driving teams and many other positions readily brought to mind in connection with administration, supply, and hospital work would be suitable for a large class of this type as auxiliary to the fighting force.

Fourth, being confronted with actual experience it will tend to dispell the mental fogs of the mentally untrained and bring into our national life a more wholesome cooperation and understanding of the idea of government.

Ichthytar.--The Council on Pharmacy and Chemistry reports that Ichthytar was submitted by the Szel Import and Export Company with the claim that it was essentially similar to ichthyol in composition and superior to it in therapeutic properties. The statements that were submitted regarding its composition made it impossible to determine whether or not it was similar to or identical with ichthyol. No evidence was furnished in regard to its therapeutic value. On the basis of the available information the Council held the claims regarding composition and therapeutic value unsubstantiated and ichthytar ineligible for New and Nonofficial Remedies.--(Jour. A. M. A., March 10, 1917, p. 796.)

PRESIDENT'S ADDRESS.*

By J. B. KINNAIRD, Lancaster.

The complimentary words just spoken by my friend Dr. Prewitt, retiring President, are calculated to render a modest, retiring man vain, but I am immune. The fact is I am one of the pioneers—not a "war horse" as the doctor expresses himself—and have attended every meeting except one since we organized at Lexington. I shall continue to take an interest in our Association as long as it lives. For eleven years I acted as Secretary in my feeble way and the training was well worth the troubles and trials.

Two years ago, against my sincere and earnest protest, you selected me to preside at this meeting, for which I tender my heartfelt thanks. If I do not come up to your expectations; if I do not measure up to the high standard of my predecessors, then you may recall the remark made by me at the time of my election: "You have made a mistake--you should have selected a better man for the presidency." But I shall endeavor not to disappoint you nor disgust you, to-day nor tomorrow, and shall be just to every one on all occasions.

A presiding officer must have the cooperation of a deliberative body for a successful meeting, and I am sure each of you will do all in your power to make this one of the most successful in our history. I assume that you are my friends and that you are earnestly desirous of making our Association worth while; such being the case, you will certainly take part in the discussions and help make this the banner meeting.

Our Association has weathered the storm for thirteen years, and without laying myself liable to indictment for perjury, I can truthfully say that each and every meeting has been productive of good to all who attended and participated. The many papers read before us have been prepared by prominent surgeons who have had the interest of our profession at heart, and who have been willing to work and strive for your benefit. Our proceedings have been watched with interest and have been sought by several medical journals for publication. Last year we made what we thought permanent arrangements with the *Railway Surgical Journal* to furnish a stenographer for our meetings and to publish papers and proceedings free of expense to us, provided our membership would subscribe to the *Journal*, but the contract was unsatisfactory and we hope to publish our papers in our State JOURNAL.

The Railway Surgeon ceased to exist last

*Delivered before the Kentucky State Association of Railway Surgeons, Louisville, May 9-10, 1917.

year, literally dying of inanition. It is a pity we could not support our own periodical, but the expense was too great for the small number who pay their dues regularly.

With the present arrangement our dues can be materially reduced, the Association need have no anxiety about the publication of papers, wherefore we should increase our membership.

With untiring zeal our distinguished Secretary *pro tem*, Dr. H. Clay Jasper, laboring under many and almost insuperable difficulties, has been able to arrange and present us a most excellent program for which he should receive the unstinted thanks of our Association, for no one understands the difficulties encountered in undertaking to secure a program for a medical meeting unless he has served upon a committee. I have served in that capacity with Dr. Jasper and others for several years and am acquainted with the arduous duties.

I am not going to criticise, nor condemn anyone, nor am I going to berate you for failing in any of your duties, but I would kindly suggest that whenever an officer of this association addresses a letter, or a circular letter, to you that immediately upon its reception you respond. It will stimulate the writer and help our organization. It is, to say the least, discouraging, if not discourteous to your officers to be ignored by the members while endeavoring to conduct a first class Railway Association. If you would give the matter one moment's consideration you would see how unjust and unkind it is not to respond to a reasonable request made by those whom you have selected to look after your interests. I acknowledge I have often been remiss in my duties but from this time forth I shall endeavor to meet all the demands of our organization.

Let us work together in harmony for the upbuilding of our Association, for mutual improvement and fraternal love.

Since our last meeting we have witnessed what harmony and united effort can accomplish in other branches of railway service. We have seen four brotherhoods of railway men demand a radical change in service and wages. We have seen the demand for an eight hour law acceded to without arbitration and by the passage of the Adamson law by Congress and its validity affirmed by the Supreme Court of the U. S., thus averting a strike at a crisis. A strike at any time is a serious and costly matter but a strike at the time when our country was upon the eve of entering the world war would have been a calamity.

There is no necessity nor danger of our organization going on a strike. Our association is not in a position, nor in such a relation, to compel anyone to yield to our demands; nor

would our altruistic profession consent to such a procedure to redress a wrong or right an evil. We should have no wrongs to redress and we should render our very best services to our employers for which we should receive full compensation.

War between our beloved country and Germany is now a stern reality, and though we in this section may not have its terrors brought to our doors, still we shall feel its effects. It is our duty to show loyalty to the flag and face the firing line in battle if required by our government. Our daily work has fitted us to serve in modern warfare. The European war has demonstrated that trench warfare, with its attendant horrors, has furnished emergency surgery of a character similar to that observed by railway surgeons every day. Exploding shrapnel and bombs furnish lacerated and macerated wounds filled with septic material that demand prompt and efficient treatment. There would be no necessity for preliminary nor elementary instruction for railway surgeons, and the Surgeon could secure the service of our brotherhood upon short notice. We should possess the qualification and experience necessary to perform such services in modern warfare.

Besides doing emergency surgery there are other duties required at the front to preserve the lives of the soldiers and to prevent disease and death and disaster. It was an accepted fact previous to the present war that disease in war killed more than bullets, but at the close of hostilities in the present war statistics may be reversed.

Sanitation and hygiene play a most important part in war by providing healthy men for service and keeping them in good shape. There is a shortage in doctors for medical service and the Medical Reserve Corps wants enlistments of eligible young surgeons who are willing and anxious to serve. I think it would show our patriotism to offer the services of our members who can pass the required examination. I trust we have some young surgeon with us who will respond to our country's call. We hope the great war may end shortly and that peace may reign over the whole world.

The time for deliberation has passed and we are called upon to face the stern realities of modern war. The young men of this country must act promptly. Never before have we had such a ruthless adversary, never before have we had an opportunity to demonstrate what the greatest democracy can do. Let no one shirk his duty. I am sure our membership to a man is ready to enlist in any capacity.

We note to-day the absence of one who was full of life, and hope and enthusiasm; one who unceasingly labored for the success of

our Association from its inception; a member who freely and cheerfully gave his time, his money and untiring energy towards making our Association a leading railway organization. The publication of the *Railway Surgeon* consumed much of his time and thought. He loved the work and labored for our benefit. The unfortunate condition that forced his retirement takes from us a friend who was valiant and true. All of us deplore his mental and physical condition and we trust that the clouds may pass and the bright sunshine may return to him in this the darkest hour of his life.

Would it not be a pleasure and a comfort to his stricken wife if we should express to her as an organization our condolence? If it is the will of the membership that we should tender our sympathies I will entertain a motion to that effect.

SOME UNUSUAL INJURIES ENCOUNTERED AND TREATED UNDER ADVERSE CIRCUMSTANCES.*

By O. B. DEMAREE, Mt. Sterling.

In explanation of the latter part of the title of this paper, will say, that all the cases embraced in this report, were treated outside of a hospital, and without the aid of a trained assistant; and with two exceptions, under the worst of sanitary surroundings.

To add brevity to my report, I will state at the outset, that aseptic precautions were enforced in all of these cases.

Case 1. E. G., age 22, farmer. I was called on the morning of April 25th, 1895, to see this man, who had been struck by lightning. I found him in a semiconscious condition: feeble pulse, pinched features, cold extremities, in fact all the usual indications of extreme shock his condition was so alarming that shock was treated vigorously, before an effort was made to dress his burns. The right half of his body was burned from the top of his head to the sole of his foot. These burns were of the first five degrees or classes, as described by Ashhurst." A burn of the fifth degree, on the outside of the leg, was so severe that after the slough came away the fibula was exposed for a distance of three and a half inches down to the periosteum. In many places the burns were of the 4th degree, and only on the face and head were they of the first degree. The remarkable features of this case were, the amount of surface involved, the severity of the burns, without fatal issue, and the nature of the accident.

He was standing at an up-stairs window

which was open, when struck. He was found, shortly afterwards, by members of the family, about forty-five feet from the window sill, lying on a rock pile where he had landed without broken bones. The nail heads were melted, from the window casing against which he was leaning, and down the side of the building to the ground, and the house set on fire. The burns were treated in the same manner as other burns, but the healing process seemingly was much slower. The burn on the leg caused him intense pain, and the tendons were badly contracted, which condition was finally overcome by the use of extension weights.

This man made a very slow, but permanent recovery.

Case 2. L. H., boy, age six years. Attended him August 1st, 1901.

Nature of injury. Fractured skull. While playing in the barn he was kicked by a horse over the right eye. The cork of the shoe crushed in the frontal bone, at a point one inch above the orbital-ridge, missing the frontal-sinus, by a slight margin. I found him unconscious, and brain-substance oozing from the wound. Both tables of the skull were crushed, and small particles of bone driven into the brain. All loose bone was removed, and the inner table elevated; leaving a circular opening of about one inch in diameter. The edges only, of the skin wound were brought into apposition with interrupted silk sutures. The wound was packed loosely with iodoform gauze, and covered with sterilized dressings. Subsequent dressings were applied every second or third day until the wound had filled up, and healed. The patient was dismissed, cured, at the expiration of twenty-eight days.

This case is unusual from the standpoint of rapid recovery.

Case 3. G. P., age 40. Motorman. Date of accident, April 2nd, 1904.

Nature of Injury. Fractured skull. This man was repairing a brake-beam on a freight car, when a rope used to hold the beam up broke, allowing the beam which weighed 250 pounds to drop, striking him in the right temple, and crushing in the skull like an egg-shell. The entire squamous portion of the temporal, and the lower anterior border of the parietal, were involved. I arrived ten minutes after the accident, found him unconscious, and bleeding profusely from a severed temporal artery; I also observed about four ounces of his brain scattered about. Hemorrhage was first controlled. The man was taken to his home a few doors away, and assistance called. After an inspection of the wound by myself and consultant, he agreed with me, that active measures only, could save the patient's life. I removed at this time eighteen pieces of loose bone, and elevated the

*Read before the Kentucky State Association of Railway Surgeons, Louisville, May 9-10, 1917.

inner table of the skull; but as later conditions showed, I had not removed enough bone, the man remained unconscious, and was expected to die at any time. This condition of unconsciousness continued for six days; and after earnest entreaties, the family permitted me to do a second operation, which brought the man back to consciousness, and ultimately saved his life.

The second operation consisted in the removal of a spicula of bone three-fourths of an inch in length, which had been driven into the brain, and over-looked by both myself and consultant. After the second operation, the patient began to improve, and after several months' illness, finally regained his health, and normal mental condition.

Case 4. J. M. D., minister, age 74. I was called by long distance phone on the morning of August 28th, 1905, and informed that my Uncle, had been kicked by a horse, and needed me badly. As he lived some distance from me, I had to make the journey by train which was late, and did not reach his place until 2 P. M. I found him sitting up in bed, talking to a couple of friends, as if nothing unusual had happened to him. He was in very cheerful mood, there being no evidence of shock whatever, and I took it for granted. My mistake had been made as to the seriousness of his accident. He informed me, however, that "Maud" had kicked him, and broken his leg in two places. On examination, I found a compound fracture of the left tibia, and simple fracture of the fibula. The sharp cork of the shoe had cut entirely to the bone, tearing the periosteum from the tibial crest. His heart being in excellent condition, chloroform was used as the anesthetic of choice. The leg was prepared in the usual way. The skin surrounding the wound was painted with iodine, and the injury covered with sterilized gauze. The fragments were brought into apposition; and a plaster of Paris dressing applied, extending from the toes to the trochanter major. This dressing was reinforced during its construction by lateral strips of bandage, on the inner and outer sides of the limb. A large window was left at the sight of the injury. The wound was packed loosely with iodoform gauze. The leg was elevated, and supported on both sides by sand-bags. A bucket of sand weighing fifteen pounds, was used for extension. The wound was dressed daily, for fifteen days, then every second or third day, until the expiration of one month when it had healed perfectly. The plaster of Paris dressing was removed at the expiration of nine weeks; and the patient began walking with the aid of a crutch and cane. At the end of eleven weeks he laid aside the crutch, and depended entirely upon his cane. His gait was good, and there was no appreciable short-

ening. The bones united with the same promptness and firmness as those of a man many years his junior.

Case 5. W. F., age 38, engineer. Date of accident, June 24, 1905.

Nature of Injuries. Compound comminuted fractures of both the tibia and fibula of the right leg; and a double compound fracture of the left tibia. A gasoline engine, which this man was trying out, blew up; the cylinder head striking the right limb midway between the knee and ankle, crushing both bones into small pieces, and lacerating the muscles and soft parts in a frightful manner. A one inch bolt, blown from its attachment on the cylinder head, entered the right leg eight inches below the knee, drilling a smooth hole through the tibia, making a ragged exit at the upper portion of the calf.

The treatment of the right leg was somewhat varied owing to the severity and multiplicity of the injuries. There were some small pieces of loose bone devoid of periosteum which were removed; the limb was straightened and the bones placed in the best apposition possible under the circumstances. Nothing but a posterior wire splint could be used for some time, as the wound was septic and required semi-daily irrigation. A 1 to 10, bichloride solution was employed for purpose.

As soon as the skin and muscle had healed sufficiently, a plaster of Paris dressing was applied, and on its removal, at the expiration of twelve weeks, was replaced by a brace made by Tafel, which was worn for nine months. The leg had by this time regained some of its normal strength, and the patient was able to walk without the assistance of an artificial support. The injury of the leg was treated as an open wound. No splint was used, the hole in the bone was packed loosely with iodoform gauze, and the outer portions of the wound covered loosely with sterilized dressings. The bone and soft parts healed in thirty days. Measurements of both limbs one year after date of injury resulted as follows: No shortening of the left leg, only 1 1/4 inch shortening of the right leg.

This case strongly emphasizes what can be accomplished by antiseptic measures when persisted in, even in apparently hopeless cases of trauma; for it is evident, to my mind, that the right leg of this man would have been sacrificed in the pre-antiseptic days of surgery.

Case 6. A. C., age 36, laborer. Date of accident, April 3rd, 1907.

Nature of Injuries. Cuts from a band saw. This man had received numerous cuts from the top of his head to his heels; so many, and so extensive were his wounds, that it required 650 stitches to remodel him.

The stitches were used mainly in covering the bones with periosteum, where there was any left; and in bringing several muscles into apposition. The skin was sutured where any could be found. We even sewed the sole and heel of one foot on. A slice almost the length of one thigh, was also sewed back. He was scalped, and we sewed it back on, hair and all. The calf of one leg was almost cut away, and we sewed it back as good as ever. His gluteus maximus, even came in for its share in the slicing process. We dressed these various wounds as aseptically as possible under the circumstances; but as the man lived in a hovel, it was impossible to keep down sepsis, which soon developed; the wounds of the leg and foot discharging much pus. Tetanus threatened, and large doses of anti-tetanus serum were given him until this danger passed. His wounds healed in six weeks. His first act after getting out, was to bring suit against the company. As he had formerly been employed by them, they paid all of his bills in this instance, and promised him a lifetime job; notwithstanding the fact that he was loafing when hurt. But when the case was tried the jury found for the defendant, and the plaintiff lost a good easy job.

Case 7. C. S., age 40 years, groceryman. He was brought to my office April 25th, 1907. from his place of business, a short distance away.

Nature of Injury: A severed radial artery, including the tendons of the following muscles. Flexor palmaris longus, flexor sublimis digitorum, and flexor carpi radialis. Van Tiern's No. 2, 30-day chromic catgut, was used to ligate the artery, and to bring into apposition the severed tendons. The skin wound was closed with interrupted silk sutures, and dressed antiseptically. The arm was placed in a wire splint extending from the tips of the fingers, to the elbow; at the expiration of ten days this splint was replaced by a shorter one, reaching from the knuckles, to the elbow. At the end of three weeks, the wound having healed, the splint and dressings were left off, and passive motion commenced, and continued at stated intervals, until the hand and wrist had regained their normal function. The results were all that could be desired; complete function, with no deformity, and a well pleased client.

Tetanus Prophylaxis in Frostbite.—A Lumiere and E. Astier (*Presse medicale*, December 14, 1916) state that among ninety cases of tetanus under observation five had followed frostbite. A special affinity of the tetanus organism for the ulcerating wounds caused by exposure to cold apparently exists. Prophylactic injections of tetanus antitoxin should, therefore, be regularly given in cases of severe frostbite.

THE RAILWAY SURGEON AND HIS WORK OF TO-DAY.*

By LEWIS M. SCOTT, Jellico, Tenn.

Those of you who have taken occasion to glance over the program, have no doubt observed the wide range of latitude as comprehended by the title of this paper. Do not condemn the writer, therefore, if he should encroach upon some other man's subject, but just remember, should he do so, that he is still within the limits of his title.

I shall endeavor, in a brief way, however, to deal with such matters only as will be of interest to the emergency surgeon. With this idea in view, and the fact before me that railway surgery, from its various view points, has heretofore been widely dealt with before this association, I fully appreciate the task I have undertaken.

In the outset I wish to emphasize the fact, that if we are to maintain the high ideals for which this association was organized, and to keep it imbued with the spirit of enthusiasm, it will be necessary for each member to contribute his loyal support.

For the splendid reputation we enjoy as a body of railway surgeons, we are largely indebted to a few devoted leaders, who by their zeal and untiring efforts have manifested their willingness to serve the association in its highest interests, and who have endeavored at all times to inspire the rest of us to measure up to our capabilities.

The Kentucky State Association of Railway Surgeon is unique in the fact that it enjoys the distinction of being the only organization of its kind in the United States. So far as I am able to learn, no other state has its railway surgeon from all companies operating within its boundaries banded together in one society.

The personnel of its membership, I believe, too, is second in character and capability to no other body of medical men. The members who compose this organization are surgeons chosen by their respective companies as being men whom they considered of the highest standing in their own communities and best equipped with surgical skill. What is true in this respect of the members of this society is true, of course, of those of all other railway surgeons.

The railway surgeon is not concerned or disturbed with or by the stereotyped question: "Who shall do surgery?" that bobs up from time to time before other medical bodies. He is required to do it so long as his name appears upon the company's time-card; and, as a rule, he is equal at all times to any emergency that may demand his services.

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We should not forget the fact, too, that his work is frequently done under the most unfavorable surroundings. If we take into consideration the unsanitary environment connected with the average case of railway surgery, as against the case in the hands of the general surgeon, surrounded with trained assistants in a well regulated and equipped hospital, the man doing railway surgery often deserves more credit for the saving of a life and a useful limb, as in a case of compound fracture of the leg or arm, than does the former by doing a successful cholecystectomy or a gastro-enterostomy. Contused, lacerated and crushed wounds are the ones most frequently encountered by the railway surgeon. From the nature of this class of wounds they are especially liable to infection. This being true the importance of judicious management of our cases is extremely great.

So much has already been said and done with reference to first-aid to the injured, that I feel to inflict you with anything further along this line would be very unjust, to say the least. And yet, so much depends upon the initial treatment of injuries accompanied with open wounds, that too much emphasis can hardly be placed upon the subject. It is true that the modern method of treating fresh open wounds has very materially simplified the technique of our work.

How different the kind of work done by the up-to-date emergency surgeon of to-day as compared to that of a few years ago. It has been but a short time, comparatively speaking, since we resorted to the scrubbing brush, soap and hot water as a means of cleansing our recent open wounds, followed by the old reliable (?) bichloride of mercury solution for an antiseptic. The chances were that we washed more germs in than we washed out, and that we killed more living cells than we killed bacteria with our bichloride solution. Then, too, it required an array of basins, pitehers, brushes, irrigators and other paraphernalia, which had to be sterilized before we could begin the elaborate toilet of our wound. The writer confesses that he was at one time an ardent believer and a faithful supporter of this, now obsolete, method of dealing with such wounds, and it was with much "fear and trembling" that he finally decided to relegate such a one-time cherished method to the rear. If a wound or adjacent surface needs cleansing from grease or other material, the up-to-date surgeon of to-day uses gasoline or grain alcohol, and instead of the bichloride of mercury he treats the wound freely with iodine solution.

If we are thorough in the application of our first dressing, it will not be necessary to remove it under seven or eight days, as a rule.

The practice of to-day, if the wound be one

of the hand or foot, is to administer a prophylactic dose of tetanus antitoxine. And as an extra precaution it is well to administer a similar dose if infection has already set up at the time of our first treatment, no matter upon what part of the body the wound may be located; as there is no way of telling the nature of the infection without a laboratory test, and we cannot afford to wait for this. Just in this connection, it is interesting to note that tetanus has been greatly reduced among the injured at the front since the beginning of the European war, by the routine use of the antitoxine as a prophylactic.

By far the greater per cent. of railway injuries that the average company surgeon is called upon to treat, are those received by section men and shop men, and are most frequently injuries of some portion of the hand. With our present knowledge of the treatment of wounds, conservative surgery has come into its own; it rarely ever being necessary, if the injury be one of the hand, to amputate all or any portion of it; providing, of course, sufficient circulation is left intact to provide nutrition to the parts. This does not mean, however, that we are to be any the less painstaking in the matter of removing devitalized tissue, suturing of several tendons and nerves, placing of all other structures in their normal relation as far as possible, and providing for drainage when necessary, etc.

It would seem, from the reports with reference to the present methods of dealing with extensive and deep infected wounds by the military surgeons at the front in this great European war, that the treatment of this class of wounds will be revolutionized. In civil practice, however, one will rarely meet with such extensive traumatism as is found in these cases, which are the result, almost exclusively, of shrapnel and shell wounds. In this type of wound it is observed that the gas bacillus is especially active. We conclude from the reports of the military surgeons in the foreign medical journals, that the Carrel-Dakin method of treatment of these extensive and deep infected wounds is the most effective. To Dr. Dakin of London, belongs the credit of discovering the effective antiseptic solution, and to Dr. Carrel, of the Rockefeller Foundation, the credit of devising the means of successfully applying the hypochlorite solution to the entire area of the infected surface. The formula of the solution, and the method of applying it, is no doubt familiar to all railway surgeons.

Next in frequency, with reference to railway injuries are fractures of the long bones. The writer of the Fourth Gospel, when referring to the Divinity of the Great Physician, made the following statement in his closing chapter: "Many more things did Jesus that

are not written in this Book, but I suppose if all the things He did were written in a book, the world would not contain the books."

While, if all the things that have been said and done with reference to the management of fractures, were published in book form, the volumes would hardly cover such a vast area; yet it would seem that nothing has been left unsaid or undone. We have had demonstrated the use of all the various trappings and devices for reducing and maintaining the fractured bones in apposition, have been thoroughly instructed in the open, as well as in the closed method of treating fractures, the use of the various metallic substances for keeping in place the approximal and the distal ends of the bone, from nails and screws to the Lane plate. We have also been admonished to completely immobilize, to resort to traction, and again to allow for mobility of the fractured ends. With all of it we seem to be traveling in a circle, as it were. One very prominent surgeon in the South has stated recently that a large portion of his time is taken up with the removal of offending plates and other foreign substances, which have been applied to fractured bones by other men. As to the use of the Lane plate, I believe this society placed itself upon record a few years ago as condemning it. I am persuaded that the average railway surgeon of to-day uses his own good judgment and experience and handles each case according to its merits.

The writer observes that his neighbors, the general practitioners, enjoy more malpractice suits than he. Whether this be due to a different method of handling his fracture cases, his financial rating, or just luck, we will not say. It matters not, however, what method we use, none of us will be immune from such suits. In the language of the Master, I feel like repeating here "Let him that is without sin cast the first stone."

No railway surgeon of to-day can afford to be without some kind of an X-ray outfit in his office for observing the relations of the bones in his fracture cases. A radiograph should be made and kept on file of each case of fracture and dislocation; this for the patient's benefit, the protection of himself and that of the company.

I am convinced that it is only a matter of time when the railroad companies will require their surgeons to be equipped with some kind of an X-ray coil for extremity work, the same as our old line life insurance companies require their examiners to be supplied with a sphygmomanometer for registering the blood pressure of their applicants.

Shock is another extremely important subject with reference to the work of the railway surgeon. No doubt we are sometimes prone to

underestimate the gravity of this complication, and not at all times using the vigorous methods for combatting it that we should. Too often a life is sacrificed by a hasty operation under a general anesthetic before the patient is relieved from the shock from which he may be suffering at the time the anesthetic is begun. We should refuse to administer a general anesthetic, or attempt to do an operation of any importance, while the injured person is in a state of shock. Better by far that the operation be postponed or refused altogether, than have the patient die upon the table or soon after leaving it.

It is very gratifying to observe the splendid training first-aid teams are receiving in the matter of handling cases of shock, as well as training along other lines in first-aid work.

The writer had occasion to note the results of this efficient training while acting as a judge in a first-aid contest given by the Bureau of Mines at Pineville, Kentucky, two years ago, and also in his own town last November. In the former contest there were twenty teams competing, and in the latter there were twelve. The training and rules of contest were under the regulations of the American Red Cross Society. In this connection the writer wishes to state that he, together with one or two other men, presented a paper before this society at one of its recent meetings, dealing with the various phases of first-aid work, and in which he attempted to emphasize especially the importance of training of railway employes in first-aid to the injured. At that meeting a committee was appointed to take the matter up with the different railway companies of the State, and to report at the next regular meeting; but so far as we are aware no report from this committee has ever been made.

Somehow it appears that we turn loose a lot of "hot air" from time to time, but nothing tangible comes of the effort.

At this juncture may I add an experience that I recently had while a passenger on one of our first-class trains, which serves to emphasize what I have just said with reference to first-aid. A young man, while attempting to raise a window in the coach in which he was riding, let it drop upon his finger, which was caught against the sill and the end crushed off. The conductor called me to dress the wound. As I had nothing with me in the way of any kind of treatment or dressing, I asked if he did not have some tincture of iodine, a bandage and some sterile gauze on the train, and to my surprise found that he had nothing at all in the way of a first-aid dressing. The only thing I could do under the circumstances was to take a clean napkin from the dining car, which I converted into an improvised dressing, and instructed him to report to one

of the company's surgeons as soon as he reached his destination.

You can draw your own conclusions.

Now in conclusion, may I once more endeavor to impress upon each member of this association the importance of his earnest efforts and loyal support, which is necessary in order that we may keep abreast of scientific knowledge and to maintain our individuality as a progressive body of emergency surgeons.

So here is to the Railway Surgeon of to-day! May he continue his good work and "his tribe never grow less."

NEUROSES FOLLOWING RAILROAD INJURIES.*

By H. B. SCOTT, Louisville.

The physical results of severe shock are those dependent upon the impaired cardiac force with resultant cerebral anemia, and for a time an exhaustion of general nervous function. The mental symptoms are ordinarily at first unconsciousness, and afterward depression and psychasthenia. These latter may exist for a long time, possibly leading to forms of neurasthenia and to a psychosis of a characteristic kind, should conditions be favorable for its development. It is hardly necessary in this connection to call attention to the careless way in which the word "shock" is used in the courts, or to say that, strictly speaking, shock may be applied to an ordinary fall without consequences; or on the other hand, to the results of a blow that may instantly kill the person. While there can be little dispute about the existence of the real evidences of external injury and their possible mode of receipt, battles have been fought in settling the question with regard to the extent and the exhibition of that kind of shock which leaves no external mark. The signs of ill health which follows long brooding and enforced invalidism, the loss of fresh air, and the discontinuance of a regular occupation need not be ascribed to shock; and why should fright, incident to a railway accident, differ so radically from that of a dozen other kinds which rarely leave any such traces or the train of ill-assorted symptoms preserve such an invariable similarity, especially when presented by an ignorant person, unless they be thought of by some one else and proposed by him?

The personal equation is of course an element of great importance, and much depends upon the relations of temperament and previous habits and mode of life to the development of the vague nervous states under discussion. As a rule the active, intellectual

man is more readily apt to collapse under mental excitement and become demoralized than the individual of coarser make-up. This insensitiveness which belongs to the unintelligent and criminal is, I think, generally recognized. Lombroso and other criminologists and psychiatrists know that in persons of low organization a variety of ordinarily painful injuries and mutilations may be borne without suffering. This same inhibition of painful sensory impressions, which is also seen among religious enthusiasts, stoics, and savages, undoubtedly plays a part in enabling the malingerer to carry out his role; this, however, must not be confounded with the analgesia of true hysteria. The hypersensitiveness of the first named leads to the greater susceptibility from within or without and to consequent loss of self-control. Many litigants are young women at a time when they are undergoing sexual development and most likely to become hysterical. The excessive susceptibility in these immature subjects to powerful emotional stimulation during revivals, or when other religious influences render them fit subjects for the railway psychosis. The same fixidity of attitude and absorbed expression, which may be often recognized in hysterically melancholic girls frequently belongs to the states under consideration in the connection with a number of ill-adjusted symptoms. Many serious forms of injury to the nervous system come daily under the notice of the adjuster and his advisers, the neurologist and the surgeon. Grave fractures, both of the skull and of the vertebral column, possible infection of the brain and its membranes, coarse injury such as lacerations or contusions, dangerous forms of increased cerebral tension, possibly from hemorrhage, pressure from the products of inflammation; and injuries of peripheral nerves, all occur, and should receive the attention they deserve. Besides these we find psychosthenia, fixed ideas, hysteria, general exhaustion of the nervous system, and neuroses and psychosis incident to depression of vital force in subjects so predisposed; finally there is a disreputable band of exaggerators and impostors.

The relation of hysteria to certain vague forms of neurotic disturbance in connection with injury was recognized by many of the older writers. Brodie, Russell, Reynolds, and Paget in England had need to say, not only about the effects of trifling injuries in certain neuropathic subjects, but the latter showed how closely hysteria might mimic real joint trouble. In 1883 Walton, of Boston, fully recognized the identity of the symptoms of the alleged traumatic affection with those of hysteria and Page, a surgeon of the London and Northwestern Railroad, whose experience

*Read before the Kentucky State Association of Railway Surgeons, Louisville, May 9-10, 1917.

was extensive, analyzed and published his cases.

Oppenheim, Westphal, Strumpell gave the disorder following trauma a distinct place of its own. Neuroses, following railroad injuries may be divided into three forms; traumatic neurasthenia; traumatic hysteria; and third an alleged condition the outgrowth of one or both and practically an incurable disease. Observation of many cases has shown that the two former conditions usually co-exist and that the latter except in rare instances, is really the result of some violence which has caused a true lesion and tissue disorganization. Both neurasthenia and hysteria, however, if neglected and improperly managed, or when the patient remains in the same environment, are sometimes apt to become obstinate and almost intractable.

GUNSHOT WOUNDS.*

By WILGUS BACH, Jackson.

Since the history of Jackson and Breathitt county became famous many years ago, as a feudal district and a dark and bloody ground the press has had its say, and the truth was not in it, but as we are willing to admit the sins of which we are guilty, with out the least equivocation, and stand the censorship, with out parley, we do insist upon the justice which is ours, and when I was requested to speak here last year upon the subject of gunshot wounds I didn't know whether it was because of my being a mountaineer or whether some one thought I was a specialist along that line, and could use the address as a filler.

Breathitt county has a population of 20,000 and the number of gunshot wounds are of much less frequent occurrence than a few years ago, and at this time we are proud to say that we have only a very few compared with a few years ago, and during the past year we had less than twenty wounds of this character, counting the accidents, homicides and all, compared with other populations in Kentucky.

The type of wounds more often found are pistol, shotgun and rifle wounds, and are produced by projectiles fired by means of explosives, and the character of the wounds vary according to the weapon the distance, the size of arms and the organ injured. There may be lacerated, punctured or contused wounds from the above firearms.

All wounds treated by me have been in civil life and as a rule the first treatment consists only of painting the entire raw surface, and the area about the wound with iodine, and removal of any particle of dirt or clothing and

dressing with sterile gauze; awaiting results, then if complications arise I treat the complication. Of course if there be fractures they are treated as above first and then as any ordinary fracture of that type.

Some of the wounds are in close resemblance to punctures or stab wounds, and in this case it is never advisable to probe the wound as infection is always possible and more probable, and will do absolutely no good. In case the wound is bleeding profusely it may be necessary to open the wound and ligate, occasionally it is possible to pack the wound; but in most instances the opening is too small and the blood vessel too deep to stop the hemorrhage.

We see more wounds from 32 and 38 calibre pistols, very seldom seeing a 44 or 45, but in children, where most all are accidental they are from 22 calibre, or shotguns, and usually at closer range.

The character and direction of wounds vary according to the projectile used as a soft leaden bullet, with a small amount of powder are frequently directed from their course by tendons, ligaments, bones or muscle sheath, and without the use of skiagraph or X-ray it is often impossible to locate.

As a rule the balls cause very little trouble after patients have reached the surgeon, unless they are located in joints or some other very movable organ or are lying in or upon a nerve, I do not attempt their removal unless giving the patient trouble, at the time.

HISTORY OF GUNSHOT CASES AS TREATED RECENTLY.

Abdominal—K. W., 20 years old, white, shot September 29, 1916, self-inflicted by falling with a shotgun, same being discharged one barrel into the abdomen just below the spleen, the other nearly tore the elbow off the left arm. Patient brought to the hospital, two days later with gangrene of the left forearm, and with a general peritonitis developing. I used tincture iodine then removed the arm under a local anesthetic, patient died from peritonitis next day.

No 2. T. H., 30 years of age, shot with a 38 lead ball, at a distance of about 60 yards, entering about two inches from the ensiform cartilage passing through the large intestine and directly through the stomach. I saw him next day, opened him up, sutured the perforation in both stomach and intestine, put in a cigarette drain and he recovered, leaving the hospital in 17 days.

No. 3. H. H., age 30 years, shot with a 38 about two inches below the umbilicus. He was dressed and put on a train, taken 100 miles and then operated upon, finding fourteen perforations, the abdomen full of blood

*Read before the Kentucky State Association of Railway Surgeons, Louisville, May 9-10, 1917.

clots and the contents that escaped from the intestines. As he had eaten an enormous supper just before the injury, the contents of the bowels were all emptied into the cavity by the jostling over the rough road, and peritonitis developed and the patient died about three days later.

Brain No. 1. Kelly W., of Cannel City, 2 years old, shot with a 22 rifle close at range, the ball entering in the forehead, at the median line over the glabella, passing directly back, to the posterior part of the skull between the two lobes of the brain. X-ray shows ball near the skull having passed back in a horizontal line. The child has lost its power of equilibrium, and cannot coordinate, its eyes are now crossed, otherwise it is in perfect health, the accident occurred January 13, 1915, and was in the hospital about two weeks.

No. 2. Robin T., 37, shot with a 38 special in the right temple about the hair line, the bullet made its exit about one inch above and slightly to the front, the skull was fractured towards the top of the head about three inches and across the forehead about two inches, there was a triangular piece of bone with its apex at the site of the wound that seemed to be entirely free, the man was so drunk that his reasoning was all gone, and as his pulse was 72, very strong and breathing normal, one of my colleagues advised an operation which I refused to do. He then took the patient away and had him operated on and his condition did not improve, but his pulse and temperature remained the same a number of days and after being able to sit up he very suddenly died without ever having regained consciousness.

Chest No. 1. W. G., 44 years of age, white, strong and robust, was shot with a 32 rifle from a bridge, the injured man was directly under his assailant, and the ball entering his back while stooped, at the lower angle of the scapula, on the right side passing through the right lung lodging under the skin about two inches below and two inches to the inner side of the right nipple. I put him to bed at perfect rest, and when showing signs of pneumonia gave him pneumonia vaccine and light diet and kept sterile dressings applied. He recovered in 16 days.

No. 2. W. C., of Perry county, age 33 years, white; shot with a 32 steel ball through both arms and the body while the arms were hanging in their normal position at his side, the ball passing through the lung just below the heart, did not fracture either arm or the ribs, treatment was only painting the wound with iodine, dressing, rest in bed, was well in two weeks. His temperature was about 2 or 3 degrees above normal, his pulse was from 100 to 120, complained of very little pain except when being moved. He was very

drunk at the time of injury and was in a semiconscious state for three days.

No. 3. A. C., 30 years of age, white, was shot a number of times over the entire body with a 38 special. Once through the neck, once through each arm and once through the chest, entering the chest at the apex of the heart passing backward and outward, making its exit about four inches from the entrance, the lung was badly torn and at each beat of the heart the heart could be seen, and the lungs being so injured the air passed freely out of the wounds at each breath. He lived one day.

No. 4. J. H., 24 years of age, white, shot while drunk, carried to hospital on a stretcher at 4 a. m., pulseless, cyanosed, and speechless, with a bullet wound over the base of the heart, between the second and third rib, passing backward and inward and downward entering the spinal column and making such pressure on the spinal cord as to cause a total paralysis from the tip of the ensiform cartilage down, his bowels and kidneys refused to act and the small amount of water taken was readily ejected; he suffered severely but said he would sure recover as he had once fallen forty feet from a smoke stack onto a steel roof, and had other injuries equally as severe, he felt sure that he could not die from a little gunshot wound. So, above protests, he smoked his cigarettes, and existed from March 19, to March 23, 1916. Of course he died, but the mystery is why he didn't die at the time of injury.

Neck. Jim H., a brother to the above man, was shot three years ago through the lower lip, the ball taking nearly all the teeth on the side of entry, passing backward directly. I removed the ball from the back of the neck a few days later, and he was doing fine, it appeared, until suddenly the carotid artery sloughed in two, and the man was dead before I reached him: he was about three blocks from me, dying from hemorrhage. Both the entrance and the exit were entirely healed the boy complained of still having a sore throat, up to the time of his death, after the rupture he lived about 15 minutes.

Liver No. 1. G. S., shot with a 38 leaden ball over the region of the gall bladder, passing backward and outward: I made an incision about 13 inches from the entrance in the mid axillary line and removed a badly battered ball it having passed directly through the liver. I put the man to bed and kept him quiet for several days; he had a temperature of 100 to 103, became jaundiced, very tender over the liver and abdomen; he was constipated and complained of much gas. I did not open the abdomen as there was no sign of hemorrhage or perforation, and as it was several hours before he was brought to the hos-

pital, I decided to await the results and he made a complete recovery in eighteen days.

No. 2: Bob W., 32 years of age, colored. October 20th, 1915 was shot through the right hip with a shotgun, loaded with No. 2 buck-shot, nineteen of the balls passed through both hips lodging under the skin on the left side, two balls passed through his right hand, his assailant thinking he had missed him, it being dark, he opened fire on him with a 3S special that taking effect in the abdomen over the liver. I opened the man up soon after he was brought to the hospital, which was several hours after the injury, and found that he was shot through the liver, tearing a large hole through it, there was no perforations in the stomach or intestines, and nothing that I could do for the liver. I closed the wound with drainage, and painted all the others with iodine and dressed each day, from one wound in the hip I had infection to follow, had to open and drain, this being the only infection, he recovered with eighteen of the bullets still in his system.

Blood Vessel No. 1. D. C., of Meniffee county, age 35 years, dropped a pistol two weeks before I saw him, it being discharged, the ball entered the calf of the right leg, passing upward through the thigh. The wound had healed and an abscess formed in upper 1-3 of thigh. After reaching Jackson, in taking the man off the train he had a rupture of the femoral artery and by the time I could get him opened up the thigh was four times its normal size and the artery ruptured right near Poupart's ligament; he died within a few minutes.

Earlier Diagnosis of Pulmonary Tuberculosis.

—J. Howell Way (Southern Medical Journal, April, 1917) urges that it be kept constantly in mind that tuberculosis is the most frequent of diseases, and that when we have persons coming to consult us with indications of debilitated systemic states and slight cough we should not consider our duty performed to them until a most painstaking case history and study of their symptoms have been made, making several examinations and a complete temperature record for several days. A carefully taken history always is of vital importance. Tuberculosis is the most frequent cause of cough. Physical signs found on one side of the chest differing from those on the opposite side should almost necessarily, unless positively indicative of some other known condition, indicate tuberculosis. The tuberculosis problem in its most vital aspect rests upon the average doctor, who, if he only realizes it, is quite capable with brain, eyes, and ears of making the diagnosis of early tuberculosis, and this duty should not be assumed to be the peculiar function of specialists.

SPRAINS AND THEIR TREATMENT.*

By CURTIS AUSTIN, Bagdad.

I hope you will pardon me for intruding for a few moments, upon your valuable time. I promise you I will not bore you long.

It has been allotted me to write something on sprains and their treatment. A sprain is caused by wrenching, violently, the soft parts surrounding a joint. We may divide them into two degrees: First, a simple sprain; second, a violent sprain. The first degree is simply wrenching the soft parts of the joint, with effusions in the tissues and joint. The second degree is as stated above, with this addition, —incomplete luxation, which occurs particularly in the ginglymoid joints; in this degree the blood is frequently poured out into the joint, owing to the rupture of blood vessels, and is accompanied by inflammation. This condition ending either in resolution or induration.

Treatment: The treatment of the first and second degree are practically the same. Many different opinions have been entertained as to whether a recent sprain should be treated by hot or cold applications. Mr. Cock, of Guy's hospital, holds as the result of his large experience, a very strong preference for cold applications. He states that the consequence of a sprain may be very much limited both in duration and severity, by the early and efficient employment of cold. It should be done, either by iced-packs or by irrigation. The joint should be kept at rest for a few days, and in an elevated position. A snug bandage sometimes gives some comfort after the swelling has subsided, but not until the cold applications have been used for several hours, or days, as the ease might require. After the acute stage has passed, I sometimes use a local application of alcohol, and tincture of arnica, equal parts, three or four times daily, rubbed in well. I always insist on my patients using the sprained joint as early as possible if it does not cause too much pain to do so. I believe they get better results by using the joints early, than by keeping them quiet or fixed too long.

The duration of sprains are varied; ranging from ten, fifteen to twenty days, or perhaps a month, according to severity.

There is another sprain, or wrench, as it is commonly called, and that is a wrenched or sprained back,—found only among employees of a corporation, in which, in a great majority of cases, a complete cure can be effected when the proper remedy is applied; the panacea consists in the company settling with the plaintiff promptly; it never fails to give quick relief.

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FRACTURED SKULL.*

By J. W. PARKER, Corbin.

Fracture of skull is classified primarily as fractures of the vault and fracture of the base. The former are, as a rule, the result of a direct blow at the place of fracture: the latter are, as a rule, caused by the action of an indirect force, a blow or fall and so forth, not directly at the point of fracture, although Rawlings states that the blow is usually delivered near the basic level.

In fractures of the skull the bony displacement is not of so much importance as the resulting injuries to the brain.

In fractures of the vault the symptoms are essentially those of brain contusions or compressions. Fragments of bone may be detached and driven into the brain substance, and these depressions can usually be detected by the surgeon with proper examination.

In vault fractures, therefore, the most important part of treatment is to render the wound aseptic and explore the fissure in the outer plate to determine the condition of the inner plate, and if necessary to remove fragments of bone. The exploration is usually made with a glove finger.

The extensive defects can be repaired by replacing bone fragments after sterilization. If subdural hemorrhage is present the removal of the blood clot is indicated.

MacGruder says, "A suspected depression justifies exploratory operation and an actual one demands it." Operation is likewise indicated to check hemorrhage, to remove blood clots, possible bone fragments, and to prevent infection. It is indicated in penetrating wounds of the skull, in compound fractures, and in simple fractures with accompanying symptom of hemorrhage. Seudder says: "Operative interference is demanded in penetrating or sharply depressed fractures, in all simple fractures with symptoms of intracranial hemorrhage increasing in severity or distinctly localized.

Further treatment is the same as for simple brain concussion. And further operation is not indicated unless the severity of the symptoms show an increasing intercranial compression. Fractures of the base are much more serious than those of the vault.

A large proportion of the injured die within the first twenty-four hours from primary shock, and brain hemorrhage and lacerations. Immediate operations are not usually indicated in base fractures, although trephining may sometimes be done to alleviate depressed bone fragments. Dr. Burnham outlines the

conservative treatment of fractures of the base, of the skull as follows:

Rest in bed usually with the head elevated and the employment of the ordinary measures to combat shock due to trauma. If the heart is failing during the early stage stimulants may be given but care should be taken not to cause overstimulation with a consequent increased intercranial hemorrhage. An ice cap should be applied immediately to the skull and the patient should be kept strictly at rest by means of sedatives. Morphine and chloral are of value and should be used early for restlessness on irritable patients. It is further indicated to use measures for the prevention of infections, if there is bleeding from the ear, the meatus should be carefully wiped out with iodine and pledgets of sterile cotton, or gauze should be loosely placed in the external auditory canal. Care being taken to permit free discharge from the ear if there is hemorrhage from the nose and the mouth. The cavities may be swabbed with a weak solution of silver nitrate or with iodine in an oil media. This authority also recommends the use of hexamethylenamin to prevent infection and meningitis, given either by mouth or by rectum from the time treatment has begun till danger of infection is passed. The initial dose may be as much as 60 grains, and as much as 100 to 120 grains every 24 hours may be given.

The drug may also be given intervenously or subcutaneously if the patient is in deep coma or if need is urgent.

Cushing recommends subdural decompression as routine measure in fracture of the base. But other surgeons recommend only with signs of increasing intercranial pressure, as in other cases of brain compression. Lumbar puncture is advocated by some authorities to relieve the pressure symptoms where decompression is not advisable.

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Control of Intestinal Bacteria.—A recent investigation indicates that the direct feeding of bacterial cultures of lactic acid producing organisms had almost no influence on the intestinal flora. On the other hand the administration of milk sugar (lactose) brought about a marked change in the intestinal flora. It appears therefore that the beneficent action of milk cultures is dependent on the lactose and not on the bacteria which they contain.—*Jour. A. M. A.*, March, 24, 1917, p. 918.

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ILLUSTRATING SOME OF THE POSSIBILITIES OF ANTISEPTIC SURGERY.*

By D. G. SIMMONS, Adairville.

The wonders to be accomplished by the proper use of antiseptics are now so well known, so well established, and the daily resort to their use so universal that even a passing allusion to them has become supererogatory, but I wish to present a case which was so unusual in its results, as it seems to me, that I have thought that a history of it possibly might prove interesting to this society. But if I could not produce creditable eye-witnesses as to its truthfulness, I might hesitate to allude to it.

Briefly the case was about as follows:

In August 1894, I was called to Ferguson's Station, a small town in Logan County, Kentucky, to see a nine-year-old boy who had been injured by a mowing machine. It was about dark when I reached the patient and the work had to be done by lamp-light. Fortunately the child was in vigorous health and as well as I could ascertain, he had no hereditary taint. After riding on the mower with his uncle till he tired of the novelty, he requested to be put down, which was done, and his uncle told him to remove some weeds which were choking up the sickle, and started to tell him to remain behind the blades, but the child was a nervous quick motioned boy and jumped over the sickle before he could be directed not to do so.

At that moment the mules started and the blades caught his feet from behind in a second's time. Doctor West, a young physician at the station, was immediately summoned and he had controlled the hemorrhage before my arrival.

Upon examination I found both feet cut off except a hinge of the soft tissue on the front of each ankle joint, about one and a half inches wide. These hinges were almost perfectly identical in location and quantity of soft tissues involved in each foot. In both feet the anterior tibial artery and nerve, as well as the flexor tendons were uncut, thus preserving a possibility of nutrition, sensation and motion.

At the time of receiving the injury he seemed to have been standing on one foot with the heel of the other foot slightly raised. The blades struck the former just opposite the ankle joint, severing the Achilles tendon, passing through the middle of both malleoli and going entirely through the joint, leaving the anterior soft parts uncut, as previously de-

scribed. The sickle caught the other foot on the heel, passing diagonally through the tarsal bones, and stopping when the soft parts were reached exactly as in the first described foot.

The cut surfaces were dreadfully heckled and irregular, and the trimming and smoothing necessary to secure anything like a desirable coaptation of the parts was a most tedious process and considerably prolonged the time for anesthesia.

The Achilles tendon was transfixed with a heavy suture and brought down and united with the lower fragment and the outer edges of the wounds were adjusted with about seventy five sutures. The dressing of the wounds was necessarily tedious and consumed very much more time than was desired to keep the patient anesthetized, but he was entirely conscious by daylight and seemed quite bright.

The prospect of saving the feet was by no means bright and I prepared the parents for their probable loss, but the possibility of saving them was well worth an effort. For subsequent treatment and thorough ventilation we selected a large room with four windows and placed a lounge in the centre of it. A large pillow covered with a large piece of oil cloth was arranged near the foot of the lounge and the boy was placed on the lounge with his feet, properly wrapped with gauze, placed on the pillow about twelve inches apart.

A large bowl was suspended from the ceiling just over the feet and this was half filled with a solution of bichloride of mercury, one to three thousand, which was kept at a low temperature constantly by lumps of ice. Siphonage over each foot was maintained by immersing the middle of a string of lampwicks in this solution, the ends hanging about fifteen inches below the bowl on each side. Thus a constant drip, drip, drip of the ice cold solution on each foot was maintained day and night.

In eight days I went down to see the patient and remove the sutures. I found him doing well apparently in every particular. Union seemed complete all around each foot except over the Achilles tendon. This suture had cut through the upper fragment by reason of the constant contraction of the gastrocnemius and soleus muscles, and the two fragments were separated about one inch. There had been, all told, about one dram of pus at the seat of this suture, and this was the only appearance of pus during the whole process of healing in both feet.

The sutures were removed and the same method of dressing was continued. Suffice it to say that a perfect union was secured and ultimately a fibrous connection was established between the severed ends of the Achilles tendon with results all that could be desired.

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After some weeks very cautious manipulation was practiced with the view of re-establishing motion in the ankle joints if possible. To my surprise and delight this motion was secured and soon seemed to be as perfect as ever.

As cold weather approached it was found difficult to keep the feet warm when exposed to the weather, and it was two years before anastomosis was sufficiently developed to secure perfect nutrition and heat function, but they *were* secured ultimately, and he acquired sufficient motion to run and jump as well as ever, and I am told that he has become an expert ball player.

Some years later when the boy had grown up, a medical friend of mine who lived near him, took him before the Logan County Medical Society for exhibition. A thin white line around each ankle was all that remained to indicate the extent of the injury.

It may be thought that I have gone into an unnecessary amount of detail in the above description, seeing that my auditors are all skilled surgeons, and doubtless that is true, but we country doctors have to be surgeons, obstetricians, general practitioners and more or less horse, cow and hen doctors, and going into detail becomes something of a habit with us, and well established habits are hard to break.

THE RAILWAY SURGEONS AS AN EXPERT WITNESS.*

By A. R. BURNAM, JR., Richmond.

When I was invited to read a paper on this occasion, I was impelled to accept it by the anticipation of pleasure and instruction from meeting with you, and not by a belief that I could impart to you anything that you did not already know. And I will ask you at the beginning that you treat my short paper kindly, and overlook many errors that I will make when I speak of matters of which I know not and of which you know well.

I selected the subject which came first into my mind. When a lawyer thinks of addressing a body of doctors, he first thinks of the doctor as he knows him on common ground, when both are engaged in practicing their profession. The analogy can be carried still further. The attorney when he actually tries a case, first presents the fact which he has marshalled after great labor with reference to the disputed question of fact, and from the facts he draws his conclusion of fact and law. By far the most important part is to conclusively establish the facts. For if the jury

differ with him as to the facts, they cannot accept his conclusion as to liability therefrom.

The railroad surgeon likewise, when he takes the witness chair, must first testify as to the facts with reference to the injured litigant, and from these facts he draws his conclusion as to the effect of the stated condition upon the life, health and earning capacity of the plaintiff. His position is unlike that of a pure expert, who testifies only as to conclusions in response to hypothetical questions asked him.

He must not be satisfied with simply stating the facts and his conclusion, but must anticipate that both his statement of condition and his conclusions drawn therefrom will be vigorously assailed by other experts. He will also be called upon to contradict false or exaggerated statements of the condition of the plaintiff, and to demonstrate the error of the other experts' conclusions as to the effect of the admitted injury upon the health of the plaintiff. The facts and conclusions he seeks to establish are submitted, not to a jury of surgeons, but to twelve laymen, none of whom is presumed to have any knowledge of medical matters. This makes his position more difficult, and puts him in the position of a school teacher who is trying to explain a problem to a class of young children. The witness must therefore cultivate qualities and make preparation as witness, which are not necessary in the ordinary practice of his profession.

In case of visible serious injuries, the loss of a leg, an arm, or an eye, there is usually little room for difference between experts. The contradictions between them arise in cases where there is little, if any, visible evidence of injury, and where it is claimed by the plaintiff that serious and permanent disabilities resulted. In such cases very large verdicts are often obtained, many of them undoubtedly based upon false claims as to the condition of the plaintiff. The character of such claims are of endless variety. It is often claimed that an apparently superficial injury resulted in injury to a nerve, numbness and partial paralysis. An ordinary fall, such as all of us have frequently in life, but which happens to occur upon a railroad platform or train, results in injury to the brain, incurable headache, impairment of vision, or injury to the spinal cord. I know of a case where a severe blow on the chest, is claimed to have been the proximate cause of the patient developing tuberculosis. Every one of you can recall superficial injuries treated by you, which the patient afterwards claimed resulted in conditions which you could not have pictured in your wildest dreams. Often a serious condition actually exists, but is in no way attributable to the injury, indeed may have existed long prior thereto. If a man has any-

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thing wrong with his anatomy and has an accident on the railroad, you can almost certainly anticipate that he will claim that this condition resulted from the accident or was greatly aggravated by it.

It is in this character of cases that the railroad surgeon is put upon his metal. And it is only where he has been most thorough in his handling of the case and kept an accurate record of it, that he can successfully combat the fraudulent claim.

As the surgeon's conclusions are based entirely upon his statement of the condition of the plaintiff, if the jury does not accept his statement of the facts, his conclusion will necessarily be discarded. It therefore, becomes of primary importance that he should convince the jury that his statement of the condition of the plaintiff is correct. He cannot obtain the necessary facts after the suit is brought, but must obtain them while the plaintiff is under his care, or being examined by him. The following facts occur to me as important and which the surgeon should in every case fully learn and make accurate memorandum of, so that if afterwards called as a witness, he will be able to testify fully and accurately.

His examination of the patient should not only ascertain the exact extent of the injury, but should be such that will enable him to testify not only as to what his condition was, but also to state what it was not. For instance if the patient should in the trial claim that his spinal cord was injured, the surgeon should be able to testify from personal knowledge that his examination covered this feature and that the cord was not in any way injured, if it was not; and be able to support his statements by giving the symptoms and other data that precludes the possibility of such a result.

He should be careful to make note of every defect he found in the patient, whether caused by the injury or not, because if there is a defect or abnormal condition, and he failed to notice it, or to testify concerning it, the opposite side will be sure to take hold of his omission, and contend that it is evidence that the surgeon did not carefully examine the patient, or else he would not have overlooked the defect.

The examination should cover old injuries or old diseased conditions. So that if it is claimed that some old condition resulted from the injury, he can testify positively that it did not, because his examination disclosed the fact that it was an old condition and existed prior to the injury and was discovered by him in his examination.

It often turns out that the patient has some trouble that the surgeon will be unable to discover in his examination. It is important therefore from a medical and legal standpoint that the surgeon should get a history from the

patients of previous injuries or sickness. These the patient will ordinarily give him when he is under treatment, or being examined immediately after an accident, but will, when he has gotten the idea of getting big damages firmly fixed in his mind, conceal.

If the surgeon's examination, treatment and investigation of the history of the patient is complete, and he has kept an accurate record of it, he will be able when called as a witness to establish the true condition of the patient with such fullness and accuracy as to impress the court and jury with the fact that he had handled his patient in a conscientious painstaking manner, and actually knows the facts he is testifying about. And his statement of fact will be accepted in preference to that of another surgeon who has not made a thorough preparation and shows a lack of knowledge of the patient's condition.

After the surgeon has fully established the facts with reference to the condition of the patient, it is ordinarily an easy matter to state his conclusion therefrom. Just as it is easy for a physician to prescribe for a patient when he is absolutely certain of his diagnosis. He should be able to state that his conclusion is not only based upon his study and personal experience, but is in accord with the experience of the medical profession generally in cases of similar injuries.

The widest latitude is allowed to the examiner on cross-examination. Counsel will attempt in most cases to weaken a strong witness's testimony from every angle. He will try to show that his examination was not complete; ask all kinds of hypothetical questions as to possible conditions and possible results from the injury. The cross-examination while it will weaken the testimony of an uncertain witness, will always help a certain alert witness. The surgeon will find many opportunities to make explanations and to make clear disputed propositions on cross-examination, that he did not have on direct examination. When asked an unanswerable question because hypothesis is not stated with sufficient detail, he should not give a speculative or theoretical answer, but should require the attorney to perfect his question so that it is capable of a definite answer. If the attorney is simply shooting at the moon, he will find that he is getting into deep water, and not being able to get down to facts, will drop his bantering. Or if he is entirely unable to qualify his questions as to make them answerable because of his ignorance of the subject, you may rest assured that the jury will quickly grasp the fact that the surgeon knows by his questions what he is talking about, and that the lawyer by his answers shows that he does not.

It is hardly necessary for me to say that an expert should avoid the use of technical

terms. He should use the most commonplace terms and explain his meaning with the same patience that he would if he were talking to men as ignorant of anatomy and medicine as children. The jury will remember and be impressed with a witness whom they understand and who has taught them something they did not know, but will not long remember the testimony of a witness whom they are unable to follow, either because he uses words whose meaning they do not know, or because he is not sufficiently patient in making himself plain to them. The surgeon is also subject to the same rules as other witnesses, in that he should always be polite, never show irritation and never make a wild or exaggerated statement.

A surgeon who attempts to follow my advice in the above particulars, must perform considerably more labor in connection with his case, than ordinarily required, especially in keeping his history of the case. Perhaps you will say more than his meager fees compensate for. If this is the case, he will at least have the satisfaction, when called as a witness, of being able to give the testimony that will leave no doubt in the mind of hearers that he is a competent, careful and industrious doctor, and knows what he is talking about.

In preparing himself in this manner and testifying as indicated the doctor does not become a partisan or an advocate. He is simply endeavoring to assist the jury in arriving at a true verdict, and is no more a partisan than an able conscientious judge who after he has laboriously studied a case and reached a conclusion, which he is certain is the correct one, writes a vigorous opinion to sustain his decision.

Acute Mammary Carcinoma.—Generally speaking, if an acute mastitis does not tend to clear up within ten days from the commencement of the disease, effort should be made to distinguish between this and the acute form of carcinoma. Both may begin with a localized area of redness and induration. In the former case, the nipple will usually be found to be the source of the infection. A rapid diffusion of the disease through the gland is noted in the latter case. The skin assumes a light or dark red color over its surface. Early axillary gland involvement may be seen in both cases and is not of great diagnostic importance in differentiating these conditions. Retraction of the nipple should be carefully looked for, though not present in all cases, is of great importance. The peculiar stony hardness, an induration due to infiltration of the tissues, usually both superficial and deep, is of the greatest importance in distinguishing these conditions and should be carefully sought.—M. E. Yarmouth, in *The Canadian Medical Association Journal*.

THE BLOOD PRESSURE.*

By WILLIAM A. JENKINS, Louisville.

INTRODUCTION.

After the epoch-making discovery of the circulation of the blood by the immortal Harvey; the notion that the blood exerted a certain pressure in its passage through the blood vessels, must have been appreciated by clinical investigators and physiologists.

The first practical demonstration of the above-mentioned fact, however, was not made until 1733 (over a hundred years after Harvey) by Stephen Hale, described in his *Statical Essays*.

The honor of furnishing the first scientific and exact observations which may be said to form the basis for the modern study of the blood pressure, belongs to two men. Poiseuille, who in 1828, introduced a U-shaped tube, filled with mercury (the first mercurial manometer) and Ludwig, who in 1847, introduced his Kymographion, an instrument for making definite and permanent tracings of arterial waves, by the aid of an ordinary recording manometer and attached to a revolving cylinder. The above methods of estimating the blood pressure were not applicable to the study of the subject in man, because they required direct connection with an opened artery.

The next practical step in the evolution of this subject was the introduction of the sphygmograph, Vierordt's, 1855, and Marey's 1860. These gentlemen, by their instruments, obviated the necessity of opening an artery. They used a solid block to make the pressure over the artery. It was soon found that the results obtained were not sufficiently reliable. These instruments, however, did measure in a fair way, the end stage of the pressure, that is, the point where the pulse was obliterated.

Next came the sphygmomanometer or the applying of pressure to arteries through a fluid medium. The first man to furnish a practical sphygmomanometer for clinical use was Professor V. Basch, of Vienna, in 1876, (See Diagram No. 1.) At a later date Basch modified his instrument considerably and substituted a portable metal manometer with a spring indicator.

In 1889 Potain used air instead of water, raising the pressure by means of a bulb. It was soon found that the Basch and Potain instruments were both subject to gross errors, due to the mode of application of the instruments, and also due to the relations and course of the artery in question.

Marey conceived the idea of compressing the blood vessels from all sides equally, in-

*Read before the Southwestern Kentucky Medical Association, Paducah, 1917.

stead of from one point. He used a tight metal box with a window in it for observation. This box enclosed the whole forearm and was fastened by means of a tight rubber cuff. It was filled with water and was connected with a reservoir. The box likewise was connected with a mercury manometer and a recording Tambour. As the pressure was raised, the pulse waves were transmitted to the water and thus to the Tambour. Marey noted that the waves (as the pressure was being raised)

BASCH'S SPHYGMOMANOMETER

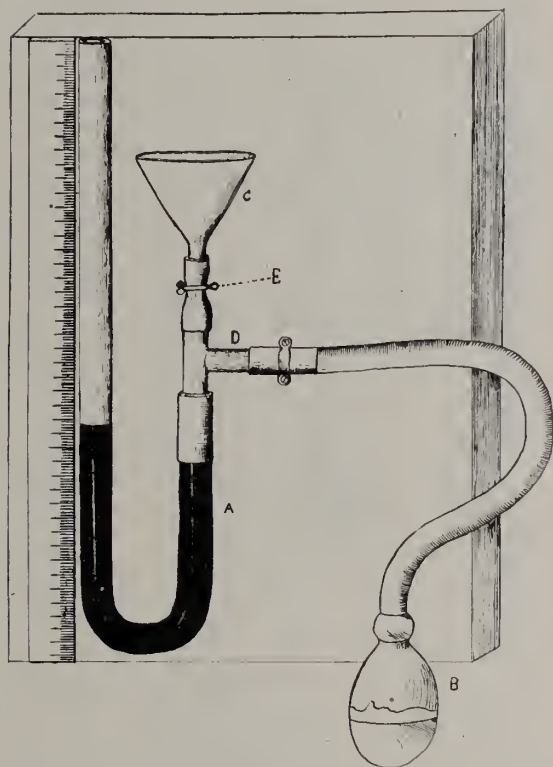


Diagram No. 1.

increased in amplitude up to a certain point and then gradually decreased and finally disappeared altogether. It has since developed that Marey's point of maximum pulsation of the arteries corresponds fairly accurately to the present diastolic pressure.

The next important step in advance was the introduction of Riva-Rocci, of the method of circular compression by air (1896 and 1897) and the sphygmomanometer perfected by Riva-Rocci has all the essential parts of the most perfect instruments in use to-day, namely, manometer, compressing arm band, and inflating mechanism.

(Hill, (1897) according to most writers on the subject, shares equally with Riva-Rocci, the honor of introducing the circular, or cuff, method of compressing by air.)

The study of the flow of liquids through a

series of elastic tubes has furnished matter of scientific interest and some facts which have a practical bearing on the subject of the blood pressure in the human being. Broadly speaking, such a mechanism may be likened in a rough way, to the blood vascular system. The compression bulb representing the Heart, the intermediate tubing representing the arterial tree, and the periphery or distal end of the tubing representing the peripheral resistance (the arterioles and capillaries). Now in the experiment we may vary any of these factors at will and measure the said variations by the method of cutting in on the tubing and introducing a mercurial manometer and reading the results. Such experiments lead us to the consideration of, first, the contractile force of the heart. Second, the resistance to be found at the periphery; third, the elasticity of the arterial walls, and fourth, the volume of the circulating blood, which are the factors determining blood pressure.

In a general way, it may be said that there are a large number of factors which influence to certain extent, the blood pressure in man. For example, we have (a) physiological variations, such as location of the cuff, position of the patient, meals, breathing, sleep, exercise, nervous and mental conditions, edema, and asphyxia, time consumed in estimating the pressure, etc., (b) pathological variations or variations produced by certain disease processes and constitutional states. It is in this later group of conditions, of course, that blood pressure estimations have proven to be of such great practical value. The estimation of the blood pressure should be made a matter of routine in the careful examination of every patient. It is considered part and parcel of the technique of the diagnostician. It is of great assistance in diagnosis and differential diagnosis and it enters largely into the estimating of a prognosis and the mapping out of a plan of treatment. It is quite evident, therefore, that the technique of this subject should be thoroughly understood, and its significance appreciated by every doctor.

THE TECHNIQUE OF THE BLOOD PRESSURE.

There are two methods of taking the blood pressure: First, the method by palpation, and second, the method by auscultation. The palpatory method is the oldest, the one first worked out, most thoroughly understood and easiest to take. It appears to be the method of choice of the average doctor. The method is as follows:

The arm (either right or left) is bared to the axilla, the cuff, which should be of uniform width, 5 inches, is applied snugly (not tight enough to cause apprehension, discomfort or in any way interfere with the circu-

lation) e.g., if applied too loosely, too much air is introduced into the cuff and the oscillations will be excessive and irregular and on the other hand, if the cuff is wound too tightly the circulation is perturbed before you start out and our results will be inaccurate. The patient should be in a sitting or reclining posture. The cuff must be at least two inches above the bend of the elbow, so as to allow the arm to be fully extended or bent at a right angle, without flexing the cuff. The fingers of one hand compresses the bulb, the fingers of the other hand are placed upon the radial artery, near the wrist (after the natural manner of taking the pulse). The cuff is now inflated in an even, regular, deliberate manner. The eyes are directed to the needle or the mercury in the tube (as the case may be). Now, at the precise moment when the pulse disappears under the fingers, a reading is made in passing. Now continue the pressure about 10 m.m. above that point, then slowly evenly, and gradually, release the pressure and note when the pulse reappears. Make a reading at this point. This reading is the true systolic pressure (and it practically always corresponds to the reading made when the pulse disappears going up). The process of releasing the pressure is continued as above and it will be seen that the oscillations of the needle or the mercury gradually increase, reach a maximum and then diminish. When the maximum point of oscillation is reached, a reading is made. This is the true diastolic pressure. The reading must always be made from the base of the oscillation or excursion, e.g. if the widest oscillation measures 80 m.m. at its lowest point and 90 m.m. at its highest point, the true diastolic pressure would be rated at 80 m.m.

This completes the first or palpatory method. The procedure is quite accurate for the systolic pressure and that is about as far as we can go in safety. The method of developing the oscillations, varies so greatly and is influenced by such a large number of factors, and the personal equation of the operator enters into the problem to such an extent that the method is rightly adjudged unreliable, so far as the diastolic pressure is concerned.

However, we must add that in case the blood vessels are markedly dilated, in the case of children, in some cases of aortic regurgitation and in individuals with a very weak pulse, this method of obtaining the diastolic pressure is perhaps to be preferred in spite of its objections.

Second, the Auscultatory Method: This method was introduced by Korotkoff, in 1905. The technique is as follows:

Directions for position of patient, method of applying the cuff, etc., as above. The bell

of the stethoscope is now placed over the brachial artery, about one-half inch below the cuff, or slightly below the bend of the elbow, over the radial artery, just as it is given off from the brachial, (see diagram No. 2). The

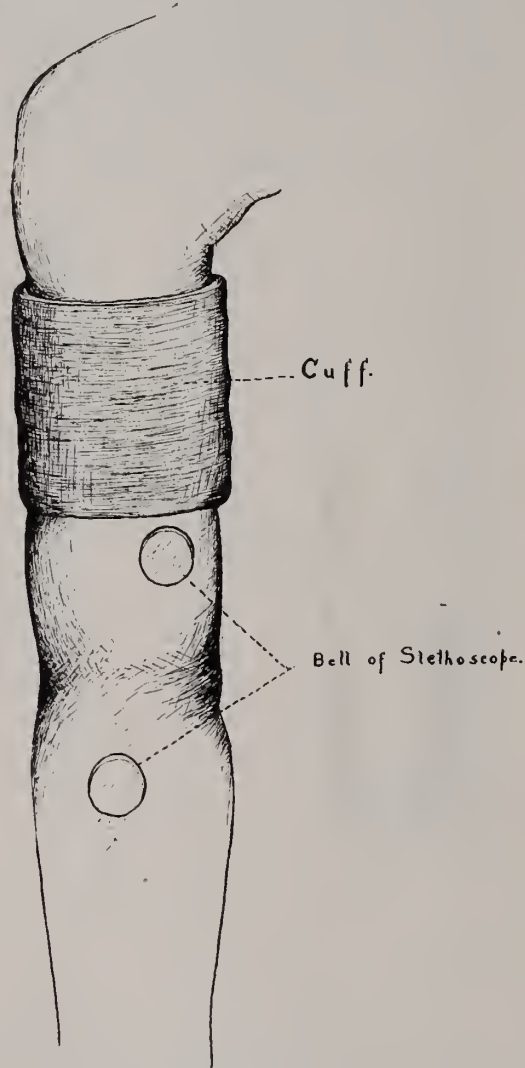


Diagram No. 2

cuff is now inflated. Soon a sharp thumping sound appears (this is the diastolic pressure point approximately). Continue the inflation till all sound disappears. The reading at this point gives the systolic pressure (approximately). Continue the pressure about 10 m. m. higher, then gradually reduce the pressure. We now make our true readings. Suddenly a clear, sharp thump is heard. (1st phase). The reading at this point gives the true systolic pressure. After a few beats, this sharp thump is replaced by a variable sound, quite distinct and like a murmur, "2nd phase". This sound after a time is replaced by a second sharp thump (3rd phase). Which soon

becomes displaced by a second variable sound less distinct and more blurred than the first (4th phase). Then very shortly all sound ceases, (5th phase). A reading taken at the moment of transition from the second sharp thump to the second variable sound (or in other words, at the end of the 3rd phase) gives the correct diastolic pressure. Some authors and observers take the moment of cessation of all sound (the end of the 4th phase) as the correct diastolic pressure. This latter (the auscultatory method) is the most satisfactory and scientific method of taking the blood pressure. It likewise furnishes us with the maximum information and the minimum of error. The only exception to this statement is found in the type of cases mentioned under diastolic pressure, taken by the oscillatory method. It has been pointed out by a number of observers, that there are current slightly different opinions in inter-

sion or your release during said second phase. It is still however, our best and safest method on the whole, of estimating blood pressure.

COMMENT.

Systolic or maximum pressure shows intraventricular pressure or roughly speaking, heart strength. Systolic pressure may vary in health from 10 to 20 m.m. Systolic pressure above the normal if not sustained, does not mean disease. Systolic pressure below 100 or above 150 m.m. (after maturity) is pathologic.

Diastolic or minimum pressure measures the peripheral resistance. It is more important perhaps than systolic pressure. It is more constant, and less liable to vary. Therefore, a constantly high diastolic pressure is more to be feared than a correspondingly high systolic pressure. The diastolic pressure usually ranges from 20 to 40 m.m. below the systolic pressure. A diastolic pressure above 100 m.m. is high and a sustained diastolic pressure of 110 m.m. or over is always pathologic.

The pulse pressure is the difference between the systolic and diastolic pressure. Practically it represents the heart load. It is usually about 50 per cent of the diastolic pressure and varies from about 25 to 45 m.m. A pulse pressure below 20 m.m. or above 45 m.m. is considered grounds for investigation. There is usually a close relationship between pulse pressure and pulse rate, e.g., lower the pulse rate and you increase the pulse pressure, and conversely with increase in pulse rate, comes reduction of the pulse pressure. A sustained high pulse pressure usually means left ventricular hypertrophy and dilation and some increase in the diameter of the aorta. A good illustration of the above may be found in an old and advanced case of cardio-vascular nephritis.

CONCLUSIONS.

In conclusion, allow me to briefly call attention to a few practical points regarding the value of blood pressure estimations, (the time at my disposal will not permit of an extensive study of this phase of the subject).

Always remember that the blood pressure estimate consists of three essential parts or phases, viz: The systolic, the diastolic and the pulse pressure. All are to be considered and the inter-relation existing between them noted, in order to obtain the best results. If you take one part or phase, you get only about one-third of the available information.

1. The blood pressure should be taken at the first examination of every patient.

2. It should be taken at intervals throughout the course of any disease process which a physician encounters.

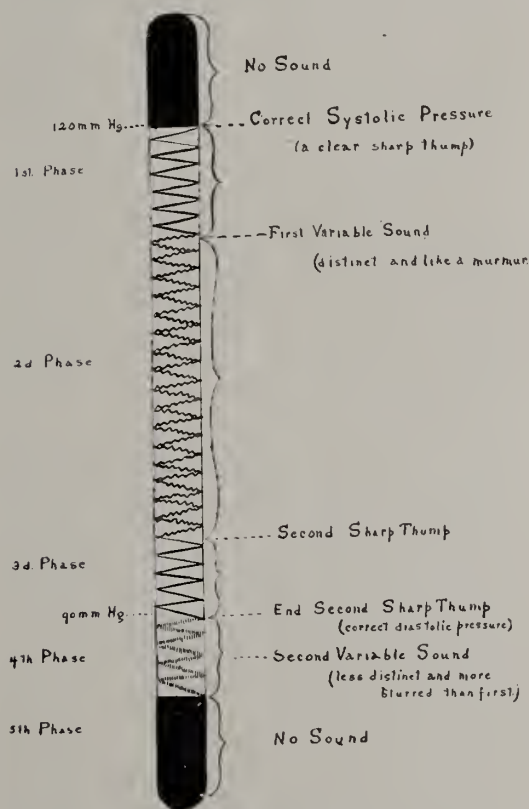


Diagram No. 3

preting our results in using this method and also that there are some possibilities of error, e. g., the second phase marked by the appearance of the first murmur may be short or absent or sharp taps or beats may be made to appear at almost any part of said second phase, by interrupting and reversing rather suddenly your compres-

3. It should be taken in every case as a routine matter where the doctor gives a certificate or estimate of health of an individual, e.g., life insurance work, and applicants for service in the army, navy, police force, etc., etc.

4. Hypertension is a fairly constant symptom in many pathologic states, e. g. arterio-sclerosis, chronic interstitial nephritis, chronic cardiac-hypertrophy, uremia, and in cardio-vascular nephritis. In cases where intra-cranial pressure is raised, as is apoplexy, cerebral thrombosis, fracture at the base of the skull, cerebral tumors and allied conditions. In true angina pectoris, aortic regurgitation, exophthalmic goiter and in the toxemia of the latter half of pregnancy.

HYPOTENSION.

A lowered blood pressure is quite characteristic of many of our common infectious diseases (especially after the first few days) when the disease has established itself, e.g., in typhoid fever, throughout the course of the disease, the pressure is reduced. Here a sharp sudden drop below the normal plane is likely to mean hemorrhage, while a sharp sudden rise above the normal plane is likely to mean perforation.

Pneumonia: Here the tension is usually low, but it may vary. Deaths due to pneumonia are supposed to be caused by vaso-motor paralysis, or cardiac failure. In the former, the difference between the systolic and diastolic pressure will be great (a high pulse pressure). The fault is with the blood vessels. In the latter instance, the difference between the systolic and diastolic pressure will be slight. Our difficulty here is with the heart muscle. It is failing (these are most excellent and vital hints for treatment, as you can readily see.)

Cancer, pernicious anemia, and the various chronic cachectic states, run a low blood pressure. Shock and collapse, however induced, show a dangerously low blood pressure. Tuberculosis, frank or concealed, is usually accompanied by a low blood pressure. Given the case of a tall, slender, flat-chested individual, slightly under weight, having a history of some tuberculosis in the immediate family, although there may be no obtainable or demonstrable clinical symptoms or physical signs, if the blood pressure of such an individual is below 100 m.m., he will be rejected by the medical director of a first class life insurance company.

Surgical Anesthesia: Anesthesia for major surgical operations may show a fall in pressure at any time. This is especially true if chloroform is used throughout. A skilled anesthetist always makes blood pressure ob-

servations at short intervals and thus keeps tab on the circulation and is prepared to circumvent shock and collapse, should they impend.

THE LABORATORY AS AN AID IN THE DIAGNOSIS OF MASTOIDITIS AND ITS COMPLICATIONS.*

By WM. BROWN DOHERTY, Louisville.

In presenting this paper it will be my endeavor to show the value and importance of the laboratory in enabling the otologist to make a diagnosis, and to differentiate the various complications of mastoiditis. I do not wish to go into the technique of the various tests which will be mentioned, nor to state the correct position of the patient's head for X-ray interpretation of mastoiditis, but I wish to emphasize one point, namely, that the work must be done by painstaking, conscientious men, qualified in X-ray examinations and laboratory research. I know of no more dangerous man than an incompetent, careless laboratory worker, and it is this type who has caused a great deal of criticism of a very important branch of our subject.

I do not wish to be known as a laboratory fiend, nor to regard any laboratory reaction or test as absolutely final without clinical symptoms, but I wish to state my observations of the clinical and laboratory results of a large number of cases during my service at the New York Eye and Ear Infirmary, and to endeavor to show how important a link the laboratory is in the chain necessary in making a positive diagnosis.

Let us begin with the pus from a discharging ear: In the early stages of acute cases, it is serous or muco-purulent in character, later becoming purulent. In chronic cases and especially in tubercular cases, the discharge may be thin and watery, and in certain forms of naso-pharyngeal catarrh, stringy. It may also be of an acrid nature, causing excoriations of the external meatus and auricle, having a slight yellowish or greenish hue and a fetid odor which is more profuse in children than in adults.

What do we find microscopically from a smear of discharging ears? The streptococcus is the organism most frequently found, then the pneumococcus, staphylococcus, streptococcus capsulatus, spirillum of Vincent, and also occasionally the bacillus pyocyaneus, diphtheria, tubercle, common colon, and Friedlander's.

In the point of virulence the streptococcus capsulatus heads the list. This organism produces destruction of bone far out of propor-

*Read before the Jefferson County Medical Society.

tion to the symptoms present. It is a most insidious germ and when once found in a discharging ear, the patient should be watched carefully. In fact, in nearly all cases in which this organism was found, mastoidectomy was necessary, and often meningitis and extra-dural abscess were resulting complications, the middle ear infection apparently being mild.

I wish to lay particular stress on the destructive effect of this bacteria—the large pearly white translucent granulations found in the mastoid and the anesthesia this organism or its toxins produces. So few cases infected with this coccus clear up, that it is nearly safe to assume that any mastoid with this infection, should be opened. I have seen internists and general surgeons who have referred cases, say, upon seeing the mastoid opened, “I did not think he had mastoiditis at all, because he had no temperature nor any constitutional symptoms.” This is very dangerous infection with very few symptoms.

Microscopically in acute cases we may find any of the above organisms. In chronic cases of mixed infection with the spirillum of Vincent, and, at times, cholesterin crystal are to be found.

Suppose we have a smear which shows a mixed infection, with the streptococcus or pneumococcus predominating. That smear would be interpreted to mean a chronic ear with an acute exacerbation. The presence of blood corpuscles in the discharge, provided the canal is not injured in making the smear, denotes the existence of granulation tissue or polypi.

One other point in regard to pus from an acute ear and that is the specific gravity. Dr. A. Forselles says, “If in the course of an acute middle ear suppuration the specific gravity of the pus goes above 1045 empyema of the mastoid process may be suspected, (by empyema he means pus under pressure) and if it reaches 1047, or higher, I hold the diagnosis certain.”

I have been unable either to substantiate or disprove the above statement, as I have had very little observation in regard to the specific gravity of pus from acute middle ear suppurations.

Let us see what the X-ray has to offer the otologist. In the first place it shows the surgeon the type of bone he has to deal with,—a very important fact so far as the outcome of any acute infection is concerned. It will point out to him his landmarks;—whether he has a far forward sinus, whether or not the zygomatic cells are well developed. Let me state that one of the most frequent causes of so many secondary mastoids is the incomplete removal of these cells.

Before we go further the type of mastoid

found in different skulls should be noted. First, the pneumatic mastoid, the most common of all. This is one in which the interior is subdivided into distinct spaces which are lined with mucous membrane.

Sometimes these cells are of considerable size, and extend down into the tip and under the anterior border of the sinus, and posterior to it. I have seen a number of large nearly isolated cells completely filled with pus, posterior to the angle, near the bend of the sinus, which I am sure might have been overlooked, necessitating a secondary mastoidectomy, if it were not for the X-ray.

An infection of this type of bone shows up beautifully with the X-ray. During the first few days of an acute infection, the plate will always appear cloudy, and in case a patient cannot afford but one picture, it is better to wait four or five days until free drainage by means of paracentesis has taken place, as the plate will have cleared up to some extent, allowing us to determine the amount of bone destruction.

The above statement must be taken with some reserve as I have seen extensive destruction of bone in mastoids with a history of only two days' duration.

A clinical picture of this type of bone infection produces intense tip tenderness for the first few days. Gradually it lessens, as drainage takes place through the drum membrane, and then the usual symptoms of mastoiditis appear, or the infection subsides. In a series of X-rays one may readily see the septa which subdivide the bone first appear fuzzy, then break down and finally a coalescence of two or more cells produce a large cavity filled with pus or granulations.

If the X-ray is taken early in this type of infection, one will find a very cloudy plate with sharply defined septa indicative of pus under pressure and it is exceedingly interesting to see the plate clear up, so to speak, after a myringotomy has been performed. These relative shades of cloudiness are interpretations which are only acquired after considerable practice.

The acute mastoid, hemorrhagic or purulent, will give a very cloudy picture in the beginning. In a series of plates one may watch the development of peri-sinus or epidural abscess, and I have seen a number of them with hardly any constitutional symptoms, such as pain, temperature, etc., the diagnosis being made only with the X-ray.

Another important point in the X-ray sometimes shown is a low dura level, the importance of which can be readily appreciated.

The second type of mastoid is the diploetic. In this variety instead of the pneumatic spaces, we find the interior of the mastoid fill-

ed with cancellous tissues. One rarely ever finds a pure diploetic, but more often a combination of the pneumatic and diploetic. The X-ray is just as valuable in this type of bone as in any other.

The sclerosed mastoid is generally considered the result of pathologic changes ending in solidification from chronic middle ear suppuration. Occasionally, however, such bones are found without any evidences of tympanic diseases.

Another type of mastoid is the infantile. This bone has practically no tip at all and a very far forward sinus. I have seen bones where the sinus ran nearly up to the posterior canal wall, so that after the antrum was opened, the operation was completed, there being no more cells to remove.

These last two types of mastoids are the most dangerous of all, and an acute infection in the infantile or an acute exacerbation of a chronic ear discharge in the sclerosed, are conditions which most often lead to some of the serious complications of mastoiditis.

Let us consider the conditions present and then we can readily understand why these types are so dangerous.

Pus like all fluids, travels in the line of least resistance. In a sclerosed or infantile mastoid with no cellular development the direction of bone destruction is nearly always in the line of thinnest bone, and in these types it means toward the tegmen, antrum or sinus, producing either an epidural abscess with meningitis or perisinus abscess. Very often in either the sclerosed or infantile, we have a bad mastoid, and by that I mean an operative case, which does not show up on the plate due to the thickened condition of the bone, but when the X-ray does show something, it generally means danger.

In common with the X-ray the history of the ear is of value in helping one to make a diagnosis. For instance, the history of a chronic running means a sclerosed bone, and a plate with a chronic history showing a large dark punched out area around the antrum would be interpreted to mean an extensive cavitation filled with cholesteatoma or granulation. Dark spots on the sinus means either softened areas or beginning peri-sinus abscess, as do also similar conditions on the dura.

In interpreting the plates we should always compare them from the two mastoids. When asymmetry occurs as it does in some few cases, diagnosis is more difficult to make. Another important point is that the plates should always be read, dry. Furunculosis of the canal, a condition which frequently simulates mastoiditis can readily be excluded by X-ray. I have seen two cases of perisinus abscess with practically no tenderness, no temperature, a normal drum, to all external appearances, di-

agnosed only by means of the X-ray. The patients came to a hospital because they had headaches, and a sense of fullness which seemed to come from the offending ear. The value of the X-ray in diagnosis is so important that it should be done in every case if possible. I have seen clinically operative cases clear up and clinically nonoperative cases come to operation, the diagnosis being made solely by the X-ray.

Let us now take up the blood count.

The blood count is not nearly so valuable in the diagnosis of mastoiditis as it is in some of the complications we meet with. In an abscess surrounded by bone, the pus cannot act chemocactically as in the soft parts. In mastoiditis the blood count is generally normal, although there may be a slight increase in the white cell count, an average of about 11,000.

In sinus thrombosis the count will run from seven to twelve thousand white cells, and polynuclear count, seventy to eighty-one per cent. This count is as important as the blood culture in making the diagnosis of sinus thrombosis. When we get such a count we should have several made, and in combination with other classical symptoms a diagnosis is usually arrived at. A count of from fifteen to twenty thousand whites, and seventy-five to eighty-three per cent. polynuclear may mean erysipelas. Considering that the streptococcus is the most frequent offender one should always be on his guard for this infection. Two types are noticed after mastoidectomy. In the superficial the temperature, skin lesion, and blood count appear at the same time. In the deep type, the temperature and blood count go up. The skin lesion appears a day or two later and often remote from the line of incision in the mastoid, frequently in the forehead, eyelids or scalp. I have seen a case of this type simulate an abscess of the neck which had resulted from too much laceration and incomplete removal of loose bone from the lower angle of the wound.

A blood count of 25,000 to 50,000 white with 85 to 95% polynuclear indicates either meningitis or pneumonia, as a rule pneumonia has the higher count. I am not taking into account the eosinophiles and mast cells as they do not have an important place here. In giving these figures we are not trying to establish hard and fast rules, but are giving averages and mentioning the typical conditions as found in our work in New York. One's ability to diagnose the atypical case is what constitutes the thorough surgeon and in order to do so we must be well informed in all branches of our subject. I cannot for want of time discuss certain other complications, systemic or otherwise, which may be those of

mastoiditis in which the blood count will aid in diagnosis. One must always remember that the polymuclear count shows the severity of an infection and the leucocyte count of the body resistance.

Another aid in the diagnosis of the complications of mastoiditis that has been brought to our attention recently by means of laboratory work is the findings in the examination of spinal fluids.

I shall not go into the technique of the puncture, but wish to accentuate the importance of fluid free from blood. Normal cerebrospinal fluid is colorless. Yellow discoloration occurs in non-suppurative meningitis, paralysis and epilepsy. Red discoloration occurs in pachy meningitis hemorrhagica; in cerebral or ventricular hemorrhage, or in the accidental puncture of a vessel in getting the fluid. As there is hardly ever a question of a hemorrhagic process in otitic-cerebral affections, a blood-stained fluid is nearly always accidental.

The pressure of the spinal fluid is an important point and the manometer is the most accurate means of determining it, but we can estimate the pressure by the escape of the fluid and I find this answers well enough for all practical purposes. Normal fluid is alkaline or amphoteric but in acute inflammatory reactions due to bacterial invasion, it becomes acid. The fluid should be examined immediately after the puncture as there is a strong tendency to alkalinity after standing. (Kopetzky).

Fibrinous coagulations in spinal fluid occur in meningitis in from six to eighteen hours. In tubercular meningitis, they are exceedingly fine and seem like a cobweb throughout the entire fluid. In discoloration of the spinal fluid due to suppuration, the coagulum is in the shape of a column or a cone with shred-like processes branching into the meniscus.

Kopetzky says: "The result of pathogenic bacterial growth in the central nervous system is evidenced by the early disappearance of the carbohydrate element in the cerebrospinal fluid and the presence in its place of nitrogenous products, the result of tissue disintegration. These two factors, particularly the latter, produce those symptoms of general intoxication which in addition to the pressure symptoms, make up the clinical picture of meningitis."

We have therefore a copper reducing body normally in the spinal fluid, the recognition of the disappearance of this substance is probably the earliest sign of bacterial invasion of the central nervous system.

Realizing that the action of bacteria is either fermentative or putrefactive and that as Kopetzky has shown, meningitis is the picture of an interaction between the tissues of the central nervous system and the organisms,

it is this reaction which furnished us with valuable data in the spinal fluid thus enabling us to make an early diagnosis of meningitis, often days before any of the classical symptoms appear.

Benedict's solution is the best test for this copper reducing substance, which is thought to be dextrose. Kopetzky, Connell, Kaplan and others have established as a fact that most bacteria prefer a carbohydrate diet, one would naturally suppose that a bacterial invasion of the spinal fluid would necessarily mean the absence of the dextrase, which would reappear after the bacterial invasion is overcome. This has been found to be the case by Kopetzky except in the slowly developing cases of tubercular meningitis. Gumprecht, Brieger and others have shown that the nervous system on man consists of a substance called myelin of which lecithin is the best known prototype. Lecithin breaks up into choline and glycerized phosphoric acid, through degeneration of nerve tissue. Haliburton, Mott, Gullewiteh. Gumprecht and others have shown that in normal spinal fluid there is a small trace of choline. Kopetzky has shown that choline was present in all cases of meningitis, in amounts above the normal minimum and that the systemic reaction seemed, in a way, to depend on the amount of choline found. Neutral fat is also an end product of lecithin degeneration and Kopetzky found neutral fat in fatal cases to be above one present. An excess of globulins is also of importance and the best method of testing for it is devised by Kaplan which is a modification of the test of Nonne and Noguchi.

The cell count is the next important data.

1-5 cells are considered normal.

6 to 9 cells, border line cases.

10 to 20 slight lymphocytosis.

21 to 50 moderate.

Over 50 marked.

In cases observed during my service in the N. Y. Eye and Ear Infirmary I found in a majority, the cell count to be an index of the reaction. For instance in a spinal fluid of fifty cells with certain symptoms of meningitis, later an increase of cells will be followed by increased symptoms of meningitis. I think a cell count of over ten is just as important in the early diagnosis of meningitis or meningeal irritation as is the disappearance of the copper reducing body. We must also bear in mind that tuberculosis and syphilis will cause a high cell count and we must exclude these conditions. But in syphilis and tuberculosis we most often find mononuclear cells while in acute purulent conditions the polymuclear. In regard to spinal fluid cultivation, it has been the custom in the institution with which I was connected always to make a culti-

vation of the spinal fluid in glucose broth. The reason for this is often in the sediment of the spinal fluid no organisms were found, but on cultivation pure cultures of streptococcus or pneumococcus were observed. The explanation of this is most likely that in the early stages of meningitis the organisms are so few that they are sometimes overlooked in the sediment. Staphylococcus nearly always means contamination. During my service at the institution no cases showing pneumococcus or streptococcus in the fluid recovered, but I have seen a number of cases showing meningeal irritation, that is, cell counts running from 60 to 1500 cells but negative spinal fluid cultivation, recover. The only case showing organisms in the spinal fluid which recover was an operative mastoid in a child complicated with an acute nephritis. The meningococcus was found in the spinal fluid, giving us the diagnosis of epidemic cerebral spinal meningitis.

The case was treated with Flexner's serum, intra-spinally and will be reported later in literature. I know there have been a number of cases of streptococcus and pneumococcus meningitis complicating otitic cases whose recovery has been reported in literature, however, I have never seen one. Pig inoculation is of value where tuberculosis is concerned.

The important data derived from the spinal fluid is, first, the disappearance of the copper reducing substance; second, the reaction; acid or amphoteric; third, coagulability; fourth, globulins; fifth, the cell count; sixth, choline, and seventh, excessive neutral fats. Let me state that in a number of cases of otitis which have suddenly developed a slight temperature, say 102, with headache and no other indications of meningitis, we have foretold the tragic ending days ahead of the time for the appearance of classical symptoms by following out the above mentioned examination of the spinal fluid.

Blood cultures. Blood cultures, to my mind, are not as valuable as could be wished. The technique should be perfect.

A negative blood culture does not exclude a sinus thrombosis. A positive culture while more indicative of this grave condition is not certain as contamination plays a big role in spite of our best efforts.

When the colonies appearing in the plates are well distributed within the center and under the surface of the media and are streptococcus or pneumococcus it is nearly safe to assume they have come from the patient's circulation. In conclusion, let me state that the laboratory findings combined with the clinical findings are the only means by which we are enabled to diagnose the atypical conditions which are frequently found. The text book

picture is the thing that so often misguides the surgeon.

In meningitis when surgical intervention is generally successful only in the earliest stage which must be diagnosed by spinal analysis alone, the use of the laboratory is imperative.

DISCUSSION.

The President: Gentlemen, you have heard this very comprehensive and scientific discussion of the essayist, and I hope there will be liberal discussion.

J. R. Peabody: I had hoped that some of the older men with greater experience would discuss this paper. It seems that very few of the ear men are present to-night but this paper should not be allowed to go by without discussion. Some of this work is more or less new to us. We haven't been in a position to carry out some of the laboratory tests that Dr. Doherty has in the wonderfully equipped hospital in which he has just finished his work, especially the X-ray work. I do not want to be too positive but I believe there have been very few mastoid cases X-rayed before the operation. Of course, unless the X-ray finding is done with great care it is worth nothing. Dr. Doherty, I am sure at the New York hospital was under one of the best men in the country and his interpretations were a great help. I am not in a position to state especially as to X-ray findings in mastoid work but I am sure that they would be of great help and I hope in the hospital here to do some work in that line. What I am especially interested in is the examination of the spinal fluid. Dr. Doherty has gone into that very thoroughly. All those statistics say that complications from acute and chronic middle ear infections are rare when we consider the number of cases that are seen daily, we never know what case will be complicated by meningitis, thrombosis or brain abscess and we must always be on the lookout for those complications. There was a case of meningitis that came in with the meningitis well developed. No operation was done. It was before I came on service. I saw the autopsy. The brain had a plastic exudate all through the arachnoid and you could see that no operation would have saved the patient's life. But a few weeks later there was another case where the meningitis had not been so well developed and we made a spinal puncture and found the fluid. The pneumococcus was demonstrated and it was a question of how much hope we could offer. I urged the family to be allowed to operate but permission was refused. We made several spinal punctures and the serum was used with very beneficial results. This patient was kept alive three weeks. We were all the time begging for permission to have an operation. The case was hopeless without an operation. There was really about one chance in a thousand with the operation, but it was worth while to take that. Meningitis can be divided in-

to three classes: Serous-meningitis, circumscribed meningitis and generalized lept meningitis. With all our laboratory tests we cannot differentiate at times between the different forms. If we could be absolutely certain which type it was we would know whether it could be saved or not.

Now, I want to mention something about the blood count. Dr. Doherty has covered the ground so thoroughly that I shall not do anything more than to emphasize a point or two. We happen to have some cases of thrombosis here and the point Dr. Doherty brought out is well illustrated in the case which I have reported here which came from scarlet fever. Any ear complication from scarlet fever is serious, especially where, as in this case, the little fellow had been in the hospital six weeks. That case the temperature would run from 99 to 106 and then in a few hours the range of temperature would be repeated again. The blood count was 12,000 and 82% polymorphonuclear leucocytes. The streptococci were not shown until four or five days after the operation. Dr. Graves made three blood cultures and finally after operation the streptococci was found. When the streptococci are not found we do not know where the new focus will be shown. I have seen cases where a patient has gone home apparently well on the road to recovery and in two weeks a brain abscess develops.

D. Y. Keith: I have enjoyed what Dr. Doherty said very much. My experience has been very limited. We haven't used X-ray for diagnosis. We haven't had more than a half dozen cases this year examined by the X-ray.

Dr. Doherty will tell you that the normal cell X-rayed is interesting to look at and study. I think probably a great many make two plates so that you can get both sides of the mastoids, so that you can look at it externally and internally. This takes a lot of expert technical work, something that everybody is not capable of doing. I think that several plates should be made. In other words make enough plates to be satisfied. Whenever you go on without being perfectly satisfied you are in trouble. If you don't think so just start out on these matters without proper preparation. I think a great deal more X-ray work should be done than has been done in the past. I understand there are men in Chicago, New York and Philadelphia who don't do anything else but X-ray work. These men doing that all the time get to be very expert and can tell things better than a man who only occasionally uses the X-ray. Whenever we get to a point of having someone doing a great deal of this work in this city we will be better off.

C. W. Dowden: What I am going to say is not very apropos, but it brings out a point that Dr. Doherty didn't mean to include under the head of his paper and yet it is a condition in which the negative value of the laboratory must be a source of consolation both to the surgeon and to the otologist as well as to the family of the pa-

tient particularly when the outcome is fatal. I refer particularly to those conditions which we meet in which the patient comes to an untimely death. You have noticed the last issue of the American Medical Journal, notice the report of a case of meningitis following an operation for mastoids and it has been my privilege in the last ten days with three of the leading otologists of this city to see just such a case. A boy twelve years old who apparently got along nicely for a few days and immediately thereafter was taken with violent pains in the head and they increased the morphine and it didn't relieve him and he became delirious and violently biting himself and vomiting. The negative value of the laboratory was determined by the failure to find anything abnormal. The cell count was normal, the globules were normal, the pressure was normal, the blood cultures were normal, there was no pupillary symptoms of any kind, all the tests had been made when I was asked to see the boy and it was hard to determine just what the trouble might be. We decided, however, how to consider the kidney as a possible source and not greatly to our surprise we found very considerable urea and the boy died from urea but with all the clinical symptoms of meningitis. In this case the laboratory work must have been a pleasure both to the surgeon and the family in that they knew that the boy did not come to his death as the result of the operation or from the condition for which he was treated.

Question: Did you see this patient before the operation?

C. W. Dowden: I did not. I understood that he was brought in two or three weeks before and the urinalysis then was negative although it showed some albumen. I only saw the boy four hours before his death.

W. B. Doherty: I want to thank the gentlemen for the discussion of my paper. I recall a case that I saw just before I left New York. A man had a chronic running ear and he suddenly became unconscious and an otologist was called to look at the man and he said meningitis. The man was taken to the hospital and treated as a meningitis case. Later on it was found that the whole trouble was uremia. A specialist should not overlook anything or take anything for granted. They should know.

Now, in regard to the remarks about serum. I have tried it in a great number of cases of meningitis, not spinal, antipneumococci and antistreptococci serums and I am sorry to say that I have never found them do any good at all. In regard to cerebro-spinal, I think a certain number of those cases can be helped with Flexner's serum. I have heard good reports from it in many cases. The point I want specially to bring out is this: In a case of meningitis when the patient is unconscious, when you have all the typical symptoms of meningitis, surgical intervention is nearly always hopeless. You can do

very little good then. The time to operate is when you get a so-called serous meningitis or meningeal irritation. This is the time when operative proceedings will help. In other words in all cases of meningitis in the beginning you have meningeal irritation or serous meningitis. In these cases the spinal fluid shows leucocytosis. During this stage by repeated lumbar punctures and decompression we may relieve the pressure and establish drainage. I have seen several of those cases helped but when we have diffuse meningitis with all the clinical symptoms, my experience has been that you might as well let them alone. The man who has done more of this work than anybody else, Dr. Kopetzky, has written an article on meningitis which is a classic. I would advise every man to read that article. It undoubtedly brings out all the important points of early diagnosis of meningitis. Let us remember then, that by an early diagnosis we can save a large number of cases, but when meningitis becomes generalized, when we have all the typical symptoms of meningitis we can do them very little good.

The meeting here adjourned.

THERAPEUTICS OF ORGANIC HEART DISEASES.*

By E. A. CRAM, Butler.

In the selection of a drug to administer in any organic disease of the heart the list from which to make our selection is not very extensive.

The drugs most commonly used are digitalis, convalaria, strophanthus, sparteine, caffeine, nitroglycerine, strychnia, morphia. Of these drugs digitalis easily takes the lead; in fact it pays to play digitalis the favorite against the field. Remember that a heart with a lesion does not need treatment as long as hypertrophy overcomes the ill effects of the lesion. There is as much wisdom in knowing when not to treat cardiac lesions as there is in knowing what to do when active treatment is called for.

We will divide the treatment into the stage of compensation and the stage of broken compensation.

In the stage of compensation the treatment is wholly dietetic and mechanical.

Diet. The food should be abundant and nutritious, coffee may be allowed in elderly people. Meats of all kinds are allowed in moderation; fruits and vegetables are beneficial; milk should form a good part of diet. The digestive tract must be watched that gases do not form and interfere with the heart's action. Cathartics should be used continuously. Salines are better.

Fluids must be allowed in moderation. Pa-

tients should take less than the ordinary amount in health. Tobacco is allowable in old smokers.

Salt should be eliminated as much as possible from the food. Rest after eating should always be insisted upon. Exercise should be moderate and in the open air.

The skin should be kept active and free by tepid baths and sponging. Hot or cold baths should not be used. Turkish baths must be prohibited. Flannel worn next to the skin is best.

The skin must be protected from sudden chilling as this causes visceral congestion and increases cardiac action.

Medication is indicated only to tone up the system. For anemia and as a general tonic and stomachic arsenic in the form of Fowler's solution is excellent. Quinine also is an excellent tonic.

In the stage of broken compensation rest should be complete, patient should be confined to bed. So long as digestion is good or hydrops is not present the diet should be liberal, milk, well cooked cereals, shredded wheat biscuits, zwieback, toasted bread and unsalted butter.

Later soft egg, chicken, quail, lamb, veal chops and potatoes.

The ice bag, Leiter's coil or cold compress, should be laid over the cardiac region and should be changed as soon as it gets warm.

In using cardiac stimulants digitalis is the best form of the tincture (fat free) infusion or can be given hypodermatically. In the administration of digitalis and its preparations its cumulative action must not be lost sight of. The effect on the heart can be detected nine days after its use.

In diseased heart muscle, such as aortic incompetency, fatty degeneration, and myocarditis, digitalis is contra-indicated. In cases of arterio sclerosis digitalis is dangerous unless the peripheral contraction is counteracted. Then digitalis and nitroglycerine should be combined.

When digitalis cannot be used, strophanthus or sparteine can be used in its place. With signs of cardiac failure, pulse hardly palpable, heart tones weak, extremities cold, camphor should be given hypodermatically.

When dilatation occurs venesection is life-saving. Withdrawing 20 to 30 ounces of blood. Dropsy is relieved by rest in bed and digitalis, but at times it is necessary to resort to other measures. Diuretics are indicated—such as diuretin, calomel, concentrated solutions, salines. Paracentesis is at times necessary when other means fail. For insomnia a cup of hot gruel at bed time, a tepid bath, sodium bromide is good; bromopin in 2 to 4 dram in the afternoon or evening, acts better than the bromides. Veronal is a good, safe

*Read before the Pendleton County Medical Society.

hypnotic, best given in a glass of milk in 5 grain doses and repeated in 2 hours if necessary. The cough is oftentimes annoying, codiene, 1-4 grain, should be given.

I do not believe in giving a combination of heart stimulants in organic heart lesions but try and find a drug that is indicated in the given cases, and push that drug to the point of toleration.

The following ten don't's should be given to every patient that has a heart lesion:

1. Don't take cold baths.
2. Don't lift heavy weights.
3. Don't hurry for a car.
4. Don't race upstairs.
5. Don't strain at stool.
6. Don't strain at attempting to empty bladder completely.
7. Don't wear light clothing in cold weather.
8. Don't neglect bowel disturbances.
9. Don't neglect a cold or cough.
10. Don't take strenuous exercise.

REMARKS ON BURNS AND THEIR TREATMENT.*

By A. H. BARKLEY, Lexington.

Burns are without exception the most frequent injury met with in civil life and the liability of late years seems to have increased in direct proportion to the invention of machinery and progress of civilization and science.

Since almost the beginning of the war abroad we have heard from time to time about the frightful burns caused by the modern high explosives used.

There is no injury that causes mere agonizing pain and protracted suffering and so often condemns the unfortunate victim to a lifelong mutilation of the most distressing and repulsive character.

The severity of a burn depends on the character and degree of heat, the length of time it is applied and thickness of the cutaneous structure. Thus molten lead or caustic acids will produce more destruction in the same length of time over the same area than hot water or steam and it requires a longer application of dry than moist heat.

The degree to which a patient is burned is more or less influenced by the character of fabric covering the skin, as when the surface is covered with silk or cotton the damage is considerably less than when covered by wool. Again burns are more severe with tight-fitting garments than when loose, because the heat is more directly applied in the one than the other.

As burns are usually on the surface of the body and may involve one or more layers of

the skin it is well to pause for a moment and take a hasty resume of the physiology of this important covering. It may be roughly stated that the skin performs from one-fortieth to one-fiftieth of the entire respiratory function. The absorptive power of the skin (unbroken) is a debated question, though the weight of opinion is that it has power to absorb though in small amount. Thus it will be noted from the foregoing that an area of skin large enough to cover the body of an average person plays a most important part in the excretory function, for example, a person five feet eight and one-half inches, weighing one hundred and fifty pounds should have approximately 2325 square inches of skin, or over sixteen square feet of evaporating surface. It can be readily seen how burns involving considerable area and depth would



FIG. No. 1.—Denuded area due to an accident.

affect the health of an individual. The prognosis of burns may be considered from two view points.

First, as to life.

Second, as to the usefulness of a member and the cosmetic effect.

With reference to the latter, the terrible deformity resulting from injuries of this character sometimes renders the patient unfit to earn a livelihood and in the treatment all possible care should be taken to avoid such complications. Burns about the extremities are the ones, as a rule that incapacitate patients most and those about the neck and face are often followed by extensive cicatrization, which produces the most horrible disfigurement.

Several things must be considered in the prognosis, as to life in cases of extensive burns.

First, the age of the patient.

Second, condition of the patient's health at the time of the injury.

Third, area and depth of the burned surface.

Fourth, location of burn.

Fifth, resulting complications.

*Read before the Fayette County Medical Society.

Age of Patient. It is a well known fact that young children do not stand burns well, as they are peculiarly liable to the numerous secondary visceral complications which are frequent sequels of burns and are especially ill calculated to resist them. Thoracic and cerebral complications in children are out of



FIG. No. 2.—Denuded area healed except at points.

all proportion, even in slight burns, to that of grown people.

The aged are likewise affected and resist these injuries poorly, hence the prognosis in both is grave.

Health of the Patient. Those patients who have been burned and who are suffering from tuberculosis, syphilis, gout, neuritis or any constitutional disease which tends to lower their resisting power, will stand these injuries badly, as any of the above mentioned complications may materially affect the outcome of a case.

Alcoholics are prone to succumb after burns as their powers of resistance is lessened and are more liable to visceral complications than non-alcoholics.

Area and Depth of Burned Surface. It has been said that if one-third of the body area was burned, the chances of recovery is slight. The writer had a man burned over considerably more than one-third of his body who made a complete recovery. This patient was shown before several large surgical meetings in this country and in each instance the consensus of opinion was that he was the worst burned individual to recover that they had ever seen. His case proved the exception and should not be taken as a criterion as extensive burns are always quite grave.

It sometimes happens that small areas are followed by death due to shock and other complications, and when large areas of the body surface have a burn of the first degree, the shock and pain, together with the kidney complications, which are apt to follow should render the prognosis doubtful.

Location of Burn. Burns of the chest are of all others the most fatal, particularly is this true in children and old people. Those of the neck may be followed by laryngeal inflammation and edema of the glottis, and those of the face and head by erysipelas and cerebral involvement. When located on the limbs and back, where the skin and muscle are thick, they serve to protect the subjacent viscera and are less fatal.

Resulting Complications. Many of the complications following burns have been referred to in the foregoing, however such complications as cerebral, visceral, sepsis and kidney lesions are probably the most important, and in a case where any of these arise the prognosis given should be extremely guarded.

Treatment. It can be readily appreciated that those patients suffering from extensive burns require the most sedulous attention on the part of the attending physician to procure healing of large areas and to prevent, if possible any deformity, to support the patient's strength and meet with intelligent treatment any threatened complication that may arise.

Many remedies have been suggested, some of which possess real virtue while others are of no value whatever. Only such remedies



FIG. No. 3.—Lacerated and denuded area due to accident and burn.

will be referred to as have been productive of good in the hands of the writer. The reader's attention is especially directed to the two last methods described, as they are especially worthy of a trial.

Picric acid, used extensively by the French surgeons in strength of 1-50 to 1-100 by moistening a piece of gauze and placing it over the

site of the burn has given good results, this however in the hands of the writer has given no better results than other less objectionable remedies as it imparts a yellow stain which is hard to remove and it has been known to produce carboloria.

A solution of epsom salts applied on gauze and kept moist, is most useful as it relieves pain, reduces inflammation, is nontoxic, is cleanly and is easily obtained.

The continuous bath of either normal saline or sodium bicarbonate has been especially useful and the writer can recommend this method as both simple and efficacious. Alcohol placed on a fresh burn will relieve pain and inflammation in a remarkably short time.

Within the past three years there has been introduced to the profession a method which is as unique as it is useful. It is the method of applying fresh amniotic membrane to the burned area. This was first used by the writer in 1913 when three cases presented

would have been more difficult to dress and last, but not least, necessitated a much longer stay in the hospital. The method is as follows:

The amniotic membrane from a healthy placenta is procured, the membrane cut in strips of sufficient size to cover the burned area, the inner side of the membrane is applied to the denuded surface, the whole surface is now covered with a mixture of paraffine, beeswax and castor oil. The paraffine and beeswax are melted and enough castor oil is added to make it fluid, this is applied with cotton applicators or pledgets of cotton on tooth picks using a fresh one each time. The dressing is changed on the second or third day when a similar one is applied.

Those who have not used this method will be surprised how quickly a large surface can be covered with healthy skin. It might be stated that after the dressing has been removed the surface should be very gently irrigated with normal saline solution care being taken to not disturb the islands of epithelium.

The amniotic membrane is essentially an embryonic offshoot of the skin which has two layers, the outer is the chorionic layer and is the one that adheres to the dressing after its removal and the inner layer is made up of cuboidal epithelium and is the one to be placed next to the raw surface. Before using, the membrane should be thoroughly cleansed of all blood and serum and it should be positively known that the woman from whom it is obtained is free from disease. The application of the wax dressing should be smooth so as to exclude all air.

Figures 1 and 2 show patients that have lacerated and burned areas which have been healed by the application of amniotic membrane. Figure No. 1 healed in nine days and No. 2 healed in nineteen days.

Perhaps of all that has come to us from abroad, the treatment of burns seems to be the best thing so far. While in the East recently, the writer had the pleasure of talking to three surgeons who had just returned from the war hospitals and all were very enthusiastic about the paraffine treatment of burns. The burns in this war have been so numerous and extensive, from the nature of the explosives used that some expedient had to be devised that would hasten the healing of large areas.

They claim for this method the following:

That it is easy of application.

That it relieves pain promptly.

That it heals large surfaces denuded of skin in an incredibly short time.

That it produces a soft and pliable skin.

The method consists in spraying a mixture of resin and paraffine, which has been melted, over the raw surface and covering this with a



FIG. NO. 4.—Area healed.

themselves which seemed ideal for this method of treatment.

It has been used in a number of cases since, by the writer, and other physicians of this city with uniform success. All cases in which this treatment was used were burns of the second and third degree and under the usually accepted methods of treatment, by skin grafts, etc., would have entailed more suffering,

thin layer of sterile absorbent cotton over which the mixture is again applied. This is peeled off each day and a new dressing of the same mixture is applied until the wound has healed. When the wounds are ready for this treatment they are dried by means of an electric hair drier.

This method by a French surgeon (Dr. Barthe de Sandfort) who lays great stress on the particular kind of paraffine and the method of its preparation.

Those surgeons with whom I talked were of the opinion that the paraffine and resin possessed no curative value but the merits lie in its proper application. It should be melted and maintained at 70 degrees centigrade while being applied. It is sprayed on the surface by means of an atomizer, care being taken to not let it get on the sound skin as it produces, at this temperature some pain. It can not be applied successfully with a brush as this seems to produce pain and the surface can not be evenly coated.

DIABETES MELLITUS.*

By J. J. MOLLOY, Covington.

By diabetes mellitus, I mean a chronic glycosuria, grape-sugar being the form of sugar eliminated, aggravated by the taking of even moderate amounts of carbohydrates as food and accompanied by more or less clearly outlined clinical picture of thirst, polyuria, emaciation, etc. The subject in its broader outlines is so immense involving as it does the whole field of animal nutrition that a very brief consideration of those features of the disease that specially concern us as medical practitioners is all that can be attempted here.

The disease was known to the ancients, but it was not till the beginning of the 19th century that the glycoemic character of the affection was discovered, the kind of sugar excreted, and some progress made in the dietetic management of the trouble. Diabetes is becoming more frequent, reasons not determined. It occurs in both sexes at all ages in all races and in all climates; the younger the patient the shorter the course and the graver the prognosis. About 20 per cent. of cases seem to have a history of heredity. Men are somewhat more liable than women. As to be expected, from its being a perverted metabolism it is relatively more frequent in the higher strata of life—the inactive gourmandisers are more frequently affected than those who lead the simple life. Obesity and diabetes are often associated—it sometimes follows a nervous shock, worry, too close application to study or business.

The metabolism of the carbohydrates in the

normal human, without getting into fine laboratory distinctions, runs something like this: Meeting the diastatic ferments, beginning with the ptyalin and ending with the pancreatic juice the sugars and starches are changed into dextrose in which form they are taken up by the intestinal walls and through the portal vein carried to the liver, in the liver, by the special action of the hepatic cells, the dextrose becomes changed into glycogen and as such is kept in store by the liver to be liberated and fed to the general system as the requirements of nutrition demand.

There are a number of stimulating and also inhibiting devices attached to this beautifully balanced piece of mechanism, about which we know a little and about which there is a great deal that we don't know—that the liver is the chief storehouse for the sugar elaborated from the food, and that the liver releases an amount of this sugar sufficient to sustain the normal 1 to 1000, which has been determined to be about the normal blood content of sugar—seems to be entirely certain.

It is also quite definitely settled that the liberation of the glycogen stored in the liver, is brought about mainly by the internal secretion of the adrenal glands, which liberates glycogen, and over all these internal secretions and their manifold activities presides the sympathetic nervous system. Disease of the pancreas or its entire removal produces an inability on the part of the liver to store glycogen; there is an overflow of sugar into the systemic blood, a hyperglycemia and glycosuria; the secretion from the islands of Langerhans; the little cell masses scattered throughout the pancreas is essential to the glycogen function of the liver.

In a short paper it is not possible to review all the proofs from the laboratory, and the field of physiology and pathology, of these general deductions. I only aim to hit the high places.

Clinically it is known that we have different varieties and degrees of mellituria; clinicians have surmised that the preponderance of one or the other of the agencies mentioned be instrumental in determining the clinical picture and that possibly a working formula may be constructed to refer the origin of the trouble to its proper source. When sugar in the blood much exceeds the normal content of 0.05 to 0.12 per cent., or an average of 0.10 per cent., the kidneys are unable to keep it out of the urine and we have glycosuria; in diabetes the sugar in the systemic blood varies from 0.16 per cent. to 1.25 per cent. The view most generally held as to the origin of the sugar is that as a result of disease of the pancreas, the glycogen instead of being stored in the liver is in response to the stimulating effect of the adrenals at once liberated thus

*Read before the Campbell-Kenton County Medical Society.

causing an overproduction; whilst the liver alone has been referred to as the storehouse for sugar, the muscles are also a reservoir of large capacity and the mobilization of sugar from this source seems to be determined by the same forces that operate in the case of the liver.

Carbohydrates have been taken to represent the source of the sugars, which is in the main true, yet in exceptional cases and as a sort of reserve force, sugar is elaborated from proteins and fats also—the splitting up of proteins and fats to form the necessary sugars in carbohydrate starvation, as occurs frequently in diabetes, releases certain acetone bodies and diacetic acid which are seen in the graver cases of diabetes.

The urine in diabetes is usually much increased in amount, 6 or 8 pints, and even more being often voided in twenty-four hours, specific gravity high, reaction strongly acid, color pale yellow. In the milder cases I think it is not uncommon to find considerable sugar in urine of normal or very slightly increased specific gravity, and hence a very unsafe procedure to hurry through a urinalysis, omitting a test for sugar because of a low specific gravity. A temporary or alimentary glycosuria is of common occurrence when an unusual amount of starch or other sugar producing food is eaten, such forms of alimentary glycosuria must be ruled out before a diagnosis of diabetes mellitus is made.

The symptoms of diabetes mellitus in well marked cases are usually clear enough to attract attention even before a urinalysis is reached: thirst is usually excessive and keeps pace with the increased volume of urine voided, appetite is usually much increased and digestion is normal; however, emaciation is nearly always progressive; tongue dry, skin harsh, pruritus general or pudendal, may be an early symptom; this symptom has been the most frequent cause of bringing diabetic patients to my office for relief. Furunculosis is often observed in diabetic cases. Styes and paronychia often occur in the same connection. Bronchial complications are very common, broncho-pneumonia and tuberculosis are often late events, most of the cases of diabetes that I have seen in young people succumbed to tuberculosis. In patients who have attained middle life, albuminuria is often noted, usually associated with high blood pressure. In this form of the disease gangrene of some part of the body usually of the feet is often seen.

The symptoms referable to the nervous system are among the most interesting phenomena observed in this malady. The neuralgias, neuritis, diabetic tabes, paraplegia and mental perversions are often observed, ocular and aural symptoms are seen, diabetic catarrh, optic neuritis and atrophy, otitis-media, or mas-

toid disease, in fact no other disease, unless it be syphilis, has such far-reaching effects in so many widely different fields. Diabetic coma is an occurrence of sufficient frequency to prompt great care in diagnosis, it occurs in a large per cent. of the fatal cases, especially in the young, it is caused by beta oxybutyric acid accumulating in the blood, producing a condition of acidosis.

The prognosis in diabetes is not good as to cure of the disease; once a diabetic, always a diabetic, is accepted by most authorities. As before stated, the disease runs a much more rapid and fatal course in the young. In men and women past middle life who are the fortunate possessors of a fair panniculus of fat may with care, if they are fortunate, live ten, fifteen or twenty years. The disease differs in severity in different cases, in the milder forms a fairly vigorous diet will often rid the urine entirely of sugar and it may be kept so with very little discomfort or inconvenience. A more severe form will respond to a vigorous diet and will remain sugar-free so long as the carbohydrates are kept out of the food. The severe type of the trouble often does badly, continues to have glycosuria even with the most restricted diet; therefore the prognosis must depend.

Prophylaxis is an important point to be considered in connection with diabetes, as heredity is a factor in something like 1-5 of all the cases. Some diabetic culture is very important in such families. Diabetic excesses of all kinds seems to favor the incidence of diabetes. A simple and moderate diet coupled with correct living in every sense of the word, would do most probably in the direction of preventing this dangerous disease; forego the flesh pots, live the simple life dietetically and otherwise and be delivered from many of the ills poor mortal man has to endure.

The treatment of diabetes is one of the very difficult problems confronting the practitioner and for many reasons is often unsatisfactory. I think it is safe to say there is no drug that at all favorably influences the cause of the disease, the treatment, therefore, is entirely dietetic and hygienic. I have found it difficult to secure the persevering cooperation of the patient, only in exceptional cases have I been able to secure that intelligent assistance on the part of the patient which is necessary for results. The first point to be considered in connection with a case presenting himself for treatment is to determine his "carbohydrate" tolerance, find how much sugar he excretes while on the average mixed diet, how promptly his urine clears of sugar upon the withdrawal of the starches and sugars and lastly, when his urine is sugar-free, how much carbohydrate he can take care of without causing a return of the glycosuria.

The main point is to allow as generous a diet as the patient can tolerate without producing glycosuria. This involves frequent urinalyses both quantitative and qualitative, till the carbohydrate tolerance is approximately determined. Daily examinations of the urine is desirable, not only for the information thus secured but also because of the disciplinary effect it exerts on the patient. In mild cases the total withdrawal of the carbohydrates will cause the entire disappearance of sugar from the urine; it is then advisable to add a slice of bread, a potato, or a small portion of oatmeal daily to the dietary feeling your way till sugar again appears; you are then in a position to give some intelligent advice as to just how much carbohydrate food may be allowed; these findings must be checked up every few weeks or as often as symptoms suggest the necessity for it. The Allen treatment which at present is being successfully used in many hospitals differs, I think very little in essentials from the general principles already referred to, the patient is starved for from one or two to eight or ten days, or until sugar entirely disappears from the urine, during these starvation days nothing is given but two or three ounces of whiskey, gradually a little oat meal with butter is added, the caloric value of everything being kept track of, suitable green vegetables being gradually added till the proper calories have been attained or until sugar reappears in the urine. Whiskey is allowed every day: it is a hospital procedure and implies skilled assistants.

In the more severe cases a too rigid insistence upon the exclusion of carbohydrates results in the danger of an acidosis. As a routine treatment in an average case, showing not more than two or three per cent. of sugar and where I have been able to control my patient, I put him to bed for forty-eight hours withdraw all food except night and morning an ounce of whiskey with a little sodawater or vichy, a good saline purgative repeated once or twice during these days. Then the permanent adoption of a diet something like this:

Breakfast—Coffee or tea with cream, two or three eggs, cottage or other cheese.

Luncheon—Choice of fish, lambchops, ham; two eggs; choice of two vegetables out of this list: lettuce, celery, asparagus, spinach, onions, cabbage, cauliflower, kraut or tomatoes.

Dinner—Clear soup, fish, any kind of meat, any of the above vegetables, butter, cream and cheese.

A vegetable day once every ten days or so is advisable, when patient should take nothing but green vegetables, some bacon and eggs. In the milder cases a close adherence to some such dietary as this will attain good results.

The management of the complications differs in no essential from the treatment of

such conditions occurring in other connections. In severe acidosis or coma, an alkalization of the blood should be secured as speedily as possible, either by intravenous injection or by the Murphy rectal drop method. The general condition of the patient, his teeth, his throat, his intestinal tract, his personal hygiene, his environment, should all receive attention and often much can be done to make these unfortunate patients more comfortable, or even relieve them indefinitely.

PERICARDITIS.*

By WALTER BYRNE, Sr., Russellville.

The heart is a strong, active, indefatigable, muscular body, of a conical figure, included in an exceedingly strong membranous bag, called the pericardium, or heart purse, and situated in the cavity of the chest. It has four cavities; two auricles, two ventricles; right and left auricles; right and left ventricles. Out of the ventricles issue the two large arteries of the human body; one called pulmonary, or artery of the lungs; the other aorta or large artery of the body, from which all the other arteries go off as branches of a tree from the trunk, dividing themselves into minute ramifications in their progress.

The heart has two motions, called systole and diastole: the former is when it contracts and forces the blood into the arteries. The diastole is when it relaxes itself, and receives the blood from the veins. The ventricles of the heart are each capable of receiving from one to three ounces of blood, and, therefore, being full in their diastole, we may suppose that they throw out, at least one ounce of blood each systole. The heart contracts about seventy to eighty times every minute, or about four thousand times in an hour more or less, according to the different temperaments, sexes and ages; therefore, there passes through the heart every hour four thousand ounces or two hundred and fifty pints of blood. Now, the common opinion is, that the whole mass of blood in the human body does not exceed twenty-five pints; therefore according to this allowance, a quantity of blood equal to the whole mass, passes through the heart ten times in an hour. If the heart contracts eighty times in a minute, then twenty-five pints of blood passes through its ventricles once in five minutes or twelve times in an hour; or 2,628,000 pints in one year. If one's life limit should happen to be ninety years instead of the "three score and ten," the amazing quantity of blood would reach 236,520,000 pints.

No Corliss engine can compare with this little organ, in efficiency and long service. Im-

*Read before the Logan County Medical Society.

pelled by this beating engine, part of the blood shoots upwards, and sweeps with a bounding impulse into the head. There it impregnates the prolific fields of the brain; and forms those *subtile spiritous* dews, which impart sense to every nerve, and communicates motion to every limb.

As a quiet river refreshes the forest and groves through which it passes, and makes the meadows and lowlands it intersects bloom and blossom—so the heart with an incomparably richer fluid and infinitely more numerous streams this human river laves the several regions of the body; transfusing vigor, and propagating health through the whole system. The living flood never discontinues its interchangeable tide; but night and day, whether we sleep or wake still continues to sally briskly through the arteries and return softly through the veins.

The doctrine taught by the immortal Harvey, is; that all the veins of the body falling into two trunks, viz.: the ascending and descending cava empties themselves into the right auricle of the heart. The fright auricle unloads into the right ventricle of the heart, which throws the blood through the pulmonary artery into the lungs, by its two branches, which go to the right and left lung. From the lungs the blood is brought back by the pulmonary veins into the left auricle, and thence it passes into the left ventricle through the body by the aorta and its branches, these terminate in the veins of the body, which collect the blood and bring it back to the heart by the two cava.

No organ can be severally affected without affecting the heart, and disturbing its functions; nor can the heart be in the slightest degree affected, without disturbing every function of the animal economy. But the heart is not only affected by what injures the body, but also by what ruffles the mind. Rage occasions frequent and forcible contractions. Sorrow slow and languid ones. There are instances of violent passions suspending the contractions of the heart altogether, and occasioning death.

The heart is not only affected by what hurts the body or mind of the person to whom it belongs, but also by what hurts the body or mind of others. But the extent of this kind of sympathy differs greatly in different persons. In some it embraces children, friends, relatives and countrymen. In others it seems to be entirely confined within the limits of their own bodies, or at most, reaches with a blunted sensibility no farther than to those whom they conceive to be their own offspring.

The ancients thought the heart was the organ presiding over and containing the affection and passions. To-day we speak of one being warm-hearted, open-hearted, of having a

big heart, a generous heart, a giving heart; are we correct in such statements? Aristotle, the philosopher, thought the brain was the organ to cool the heated vapors of the heart. To-day, the modern scientists say the brain controls the heart. Are we really sure?

Pardon me gentlemen for this preface to my subject, "Pericarditis."

Pericarditis is a disease often present, but seldom diagnosed. Patients suffering from it, frequently come under our care, and we treat them for the associate disease and never recognize pericarditis. Pericarditis is seldom a primary disease, but is secondary to rheumatism; septic processes; tuberculosis; eruptive fevers, and chronic nephritis. Pericarditis by extension may occur, in pleuropneumonia, ulcerative endocarditis, purulent myocarditis and valvular disease of aorta. Simple pleurisy is seldom followed by pericarditis. Pericarditis attacks all ages, even the new-born from septic infection through naval. Later in life gout and Bright's disease seem to be its favorite associates. It has a predilection for males.

Acute plastic pericarditis is the most common form. It is a benign form and rarely if ever, of itself proves fatal. In the mildest grades the serous membrane looks lusterless and roughened; with more abundant fibrinous exudation the membrane present an appearance resembling buttered surfaces of bread which have been drawn apart; the so-called hairy heart—"cor villosum."

Physical Signs. Inspection is negative—palpation, may reveal a distinct fremitus—auscultation, the friction sound is one of the most distinctive signs; it appears superficial, close to the ear and is intensified by pressure with the stethoscope, best heard at fourth and fifth intercostal spaces. Diagnosis is not difficult. The double murmur of aortic incompetency may simulate clearly the "to-and-fro" pericardial rub.

Pericarditis with effusion is commonly a direct sequence of the plastic form. It is found most frequently associated with acute rheumatism, tuberculosis and septicaemia; it sets in with precordial pain, slight fever or a distinct chill. In children the disease may come on without local symptoms and usually it is tubercular.

The effusion may be sero-fibrinous, hemorrhagic, or purulent. Amount varies from a few ounces to two quarts. Hemorrhagic exudation is mostly always associated with tuberculosis or cancer. The purulent form is generally associated with tuberculosis.

Symptoms. Even with copious effusion the onset and course may be so insidious that no suspicion of the true nature of the disease is aroused. Pain is more frequent, pressure of lower end of sternum aggravates it. Dyspnoea

is a common and important sign. Restlessness present, patient usually lies on left side or sits erect. Pulse rapid. Aphonia is not uncommon.

Physical Signs. Inspection—Precardial bulge in children; fullness of intercostal spaces in adults at fourth and fifth palpation—a gradual diminution and final obliteration of the cardiac shock. Percussion—A greatly increased dullness, the form of dullness is pear-shape, base down. Auscultation—Gradual weakening of heart sounds.

Prognosis. Simple form is good; purulent effusions are more dangerous; septic cases are usually fatal; recovery slow in tubercular forms.

Diagnosis. Probably no serious disease is so frequently overlooked. When one is called to a case for the first time and finds increased are of precardial dullness, it is hard to say with certainty whether or not effusion is present. To distinguish between dilatation of the heart and precardial effusion is very difficult. Character of impulse; cardiac sounds; area of dullness, its shape, tympanitic note in the axillary region tell the tale but can you make the distinction? The number of excellent observers who have acknowledged that they have failed sometimes to discriminate between these two conditions, and who have indeed performed "paracentesis cardia" instead of "paracentesis pericardia" is perhaps the best comment on the difficulties.

Treatment. Absolute quiet mentally and bodily. Ice bag over heart by degrees. Blister to precardia when effusion is present. A gentle acting laxative every morning. Iodide of potassium in some cases. Look to kidneys and promote their action with inf. digitalis and potass. acetat. In severe cases surgical measures may be resorted to, either paracentesis or a free incision.

The American Red Cross officials have made the estimation that in case of war they could immediately mobilize the following force: twenty-six completely equipped army and navy base hospital units, with a total of 1,250 nurses and 549 nurses' aids; thirty-one partly complete navy detachments of twenty-nurses each; 115 local emergency detachments. Corps of expert instructors in surgical dressings, totaling about 120. It was also estimated that the organization could put into the field 2,970 trained Red Cross nurses, and that if 30 per cent. of those to whom the Red Cross has given elementary training responded as nurses' aids the total nursing personnel would be about 5,000. With the customary assignment of ten patients to each nurse it would thus be possible for the Red Cross to take care of 50,000 sick and wounded at once.

THE EFFICACY OF DRUGS.*

By W. J. GERDING, Newport.

One hears only too frequently a medical man expressing himself in no uncertain terms in regard to the utter worthlessness of drugs and medicines in the treatment and cure of diseases. In other words, the so-called therapeutic nihilist is indeed not rarely met with at the present time. This, gentlemen, is what prompted me to write this paper.

While honest differences of opinion will and must always prevail, yet, it seems to me that a man who practices daily what he himself thinks is a farce is doing himself and his clientele a gross injustice.

I believe that we could profit greatly and our patients derive a corresponding benefit if we studied drug action more. A close study of drug actions and indications will insure a success never before dreamed of even by the most ardent nihilist, of course presupposing that a correct diagnosis had been made and the proper drug selected in the particular case.

My friends of the opposition will admit of drug action but claim that they have no curative properties. I believe that a majority of present chronic incurable conditions were medical and curable in the beginning, and could with proper drug application, plus other methods of treatment, have been cured. Do we not have regeneration of tissues constantly taking place in the body? What about the extensive destruction of bone and muscle as seen externally? Do we not have regeneration here? This same may take place in internal organs affected with disease. It is not reasonable to suppose or believe that where nature is delinquent, the supplying of the proper aid—mechanical or therapeutic—will promote healing and thus restore the parts to normal activity?

I cannot criticize a surgeon for not having the same degree of confidence in drugs and drug actions as the physician. When he sees the case it is usually a surgical condition and past medical aid.

Our recent graduates in medicine, while to be congratulated for their knowledge of laboratory and surgical technic, even though theoretical, present a most sorry spectacle when trying to prescribe a drug treatment after the diagnosis has been made. Their knowledge of drugs and drug actions is woefully crude and elemental. Is it any wonder that later, after many failures and sad experience they decry medicines because they see no results after trying this and trying that? This is only natural and what is to

*Read before the Campbell-Kenton County Medical Society.

be expected. Drugs and medicines worthy of the name have a decided and positive action. It is up to us to have it fit in at the proper time, use it when it is actually indicated, and then to give it in proper dosage until the desired action is obtained. If you used a carpenter's tool and found that you could not do good work with same, I am sure you, not being an expert, would not blame the tool, but yourself, in not being able to handle it properly.

Why do many fail in getting results? In the first place they start out with an insufficient knowledge of drugs, their actions and limitations. And with skepticism uppermost in their minds, is it any wonder that the results are disappointing, and what was expected? But the physician who is a true observer, diagnostician and pathologist, all of which he should be, and able to interpret symptoms early, could not do other than succeed where the nihilist must necessarily fail.

Let us familiarize ourselves with the more potent drugs, and once familiar and with a proper diagnosis, we are now on the right track. Now give the indicated drug fearlessly and until the desired effect is obtained. Knowing the physiological action, this then becomes not at all difficult. If a dose of morphine does not relieve pain, we must give more until the desired result is obtained. This same holds good with other drugs. I have witnessed the most brilliant and satisfying results in many instances where the drug was given fearlessly and sufficiently long albeit with judgment.

To succeed as a therapist must after all require a considerable amount of skill and first of all a full knowledge of the condition present. The disease must be recognized early, when we then are ready for treatment. We must know the indicated remedy and its action as well as its limitations. The nice adaptation of the proper remedy to the condition present requires a degree of skill not commonly met with.

One frequently hears of some individual, who claims that his whole *materia medica* consists of perhaps six or seven drugs, and that he seldom has to go outside of these in prescribing. This reminds me of the country surgeon who does most of his work with a wire and a string. Makeshifts are convenient in a necessity but never where a proper and suitable instrument is at hand. If you are only familiar with a few drugs use them, but would suggest that you enlarge your *materia medica*, so that you need not give quinine as a universal antipyretic, but have a wide knowledge of antipyretics so that a suitable one can be selected to meet the peculiar indications in a particular case.

There are many who believe that we cannot abort disease. If their theory were correct,

we may as well stop giving medicines and use the watch and wait method. Of course the nihilist, as well as the skeptic, cannot even hope to shorten disease or what is practically the same thing, abort it. To call a disease self-limited is a confession of our utter helplessness. Of course without proper and scientific care it must of necessity be self-limited. So is a dwelling on fire; let it alone and in time you can almost predict the time—it will stop burning even without using as much as a drop of water. But look at the result! If this were good practice no fire department with its expensive equipment would be necessary.

I know of no branch of medicine more important than the therapeutics of internal diseases, and none that is to-day given scantier attention. Why this is so is beyond my conception. Perhaps it is because the results are not so prompt as are those in surgery; besides the laity think that amputating the finger requires more skill than aborting the felon before amputation was necessary, and are willing to pay more for the latter while the former was more commonplace and worth little compensation. Again, I will say that I am not decriing surgery, for does not the surgeon come to our rescue on innumerable occasions when we have been slow to apply the means that might have prevented the condition?

Often we are too willing to waive the making of a proper examination and a proper diagnosis and call it a surgical condition; advising opening the belly in order to make a diagnosis. Why not educate ourselves to become more proficient in the art of diagnosis so that exploratory incisions need rarely be done.

Many men think their work finished when they have made a diagnosis. The rarer the disease the more jubilant they feel. Now this is only the first step toward a cure if cure is possible. Do these men give the therapeutic end—the prime object of the patient in calling on you—their serious consideration? No, this concerns them but little, in fact they care but little as to the outcome in many cases.

Right here let me say that the proper prescribing of drugs is an art. After selecting a drug or drugs, we must select a proper vehicle so as not to irritate or nauseate, and must also remember that while the drugs given—if several are given—they are chemically, therapeutically as well as pharmaceutically compatible, as this feature in prescribing is not always given the attention it deserves.

Again, too many drugs given at one time is not scientific and borders on empiricism. The haphazard method often practiced, that of prescribing many drugs with the idea that one or the other will do the work, cannot be condemned in strong enough language. This I will liken to a load of buck-shot which serves

only to excite the enemy, disease. In other words we must aim accurately with the properly selected drug lest we miss the mark entirely.

Now a word or two about proprietaries. I can not nor do I wish to condemn them altogether. Some are good, while many are nothing more than good vehicles for bad tasting medicines. Let us not be deceived by taste and color alone. If you are an observer, you will soon learn the active from the inert preparations. If in doubt give the indicated drug in its undisguised and original form as the patient's life is too valuable to trifle with.

I will now take up for consideration a few of the many extremely valuable drugs that the live therapist can vouch for. What about the new drug, pituitrin? Is there any one who doubts the value of this drug, present? I already hear some one say that it proved a failure in their hands. You will admit that it is a very potent drug and you know what it does. Now, if you use this extremely potent drug in cases where just such action is desired you will find it a very valuable friend. If, however, you use it in cases where it should never have been thought of, why of course the results will be disastrous. Then why blame the drug?

What about opium? Were you ever disappointed with its action? Of course you will admit that opium and its derivatives relieve pain, but say that this is all. What about quieting peristalsis in inflammatory conditions in the stomach and intestines? Is not rest a great step toward allaying inflammation anywhere? By slowing the circulation in cases where it is indicated do we not arrest inflammation and thus prevent a chronic condition following? What about your antipyretics? Are you afraid of them? Do you not quiet cerebral excitement and consequent delirium and other complications by the judicious use of the properly selected drug? Do we not by lowering the temperature in febrile conditions, such as pneumonia, typhoid fever, etc., keep the patient more comfortable and lessen delirium even though the fever is an expression of toxemia? Keep the temperature within reasonable bounds by the judicious use of the safer antipyretics and note the progress of the case, its moderate course and shortened duration; whereas leaving the patient religiously alone, simply sitting idly by waiting for complications which invariably occur when nature is trusted too much, is like not offering a helping hand to one in danger. I need hardly say that along with the antipyretic we must use the indicated drug to combat and even prevent the formation of toxins either in the blood or intestinal tract, or it might be in a wound.

What about that most excellent drug, digi-

talis? I fully well know what many of you will say. I will agree with you when you say that it will not cure valvular disease of the heart. We all know that it certainly acts as a life-saver in many of these cases even for a period of many years. If this statement is a strong one it is as was intended. Get into the habit of using a reliable drug and use it fearlessly. Give it for effect. If the usual small dose makes no impression gradually increase even if you have to use it in larger than the text book dose. When compensation is established gradually decreased the dose and save the larger one for future emergencies. If we use good judgment along with our medicine, we will often get results greater than those of our fondest expectation.

I believe that digitalis saved many of my pneumonia patients. Nature did not cure them for the change has often been little short of miraculous after giving this drug. I am sure many of you have had this same experience. Of course all pneumonia patients do not require digitalis. Some do better on veratrum where its peculiar action is indicated, while others have been saved with camphor.

Quinine and its salts are a most helpful part of our armamentarium. Why, gentlemen, speaking of drugs being empirical in their action, or in other words you say that many drugs are used empirically. Why, yes, so was quinine before we knew what caused malaria, and since we know the cause we still use it and it cures the disease the same as formerly.

Calomel is another drug of which all but the densest individual cannot help but laud as one to be depended upon. It has decided action and must prove helpful in many conditions which I need not mention. The other mercurial salts each have their indication and the results are positive.

What about the salicylates? Are they not valuable drugs? You know as well as I do their indications! Are they mere placebos in tonsillar and rheumatic conditions?

I am not going to quote any more drugs but could name excellent ones by the score that have more than a psychical effect. The man who is a therapist in all that this term implies can in many instances predict the result of the prescribed remedy, and to have this feeling is more gratifying.

Why do we have more incompetent men practicing medicine than surgery? I am sure it is because, as a member stated on this floor some time ago, the public have no way of knowing whether the patient is getting the proper medical care, and by way of parenthesis, many of these incompetents are really afraid to write a prescription for fear that it may be criticised. If the patient dies there is no way to know or find out whether or not everything was done for the patient; while

the surgeon who must necessarily work in the lime-light under the critical eye of the physician who referred the case, must do his work well and in a scientific manner otherwise he will soon be relegated to obscurity. Unfortunately this is not true with the physician. Would to heaven there were someone to pass on the work of the physician when no doubt many would pass from the practice of medicine and enter some other vocation where human lives at least would not be so needlessly sacrificed. A strong statement, but you have know it to be true. However in the future the public will demand more of us and consequently we must deliver the goods. The haphazard and guessing method of administering medicine will not long prevail.

To sum up, if we expect to get the best there is in drugs especially those of known activity, we must first of all make a correct diagnosis and must have a definite aim in treatment. In other words we must have a good and sound reason for giving it.

In this paper, if I have succeeded in emphasizing the importance of a careful and painstaking diagnosis and what is equally important—granting that we understand the pathology—the proper application of the indicated remedy, I am sure that the results will be such as to give us great pleasure in the practice of our profession, because as I said before, in many instances you can almost predict the results, where otherwise we will keep staring into the ether above wondering why our results fall so short of our expectation.

Effect of Opium Alkaloids on the Ureters.—

According to D. I. Macht morphin and the opium alkaloids having a similar constitution increase the contraction and produce a greater tonicity of the ureter, whereas papaverin and the opium alkaloids constituted similarly produce a slowing or total inhibition of the contraction and relaxation of the tonus. In opium and pantopon, which contains the total alkaloids of opium, the effect of the morphin group preponderates. Ureteral colic is due to spasmodic calculus and hence the use of papaverin or opium is more rational than that of morphin. Furthermore, the slighter toxicity of papaverin, its tonus lowering power and its local analgesic properties suggest its local application in spasmodic conditions of the ureter.—*Jour. A. M. A.*, March 3, 1917, p. 719.

Betaine Hydrochloride.—It contains 23.8 per cent. absolute hydrochloric acid and 8 grains corresponds to about 18 minims of diluted hydrochloric acid. In solution betaine hydrochlorid dissociates into hydrochloric acid, but it is not so efficient in aiding the action of pepsin as an equivalent amount of hydrochloric acid.—*Jour. A. M. A.*, March 24, 1917, p. 931.

A CASE REPORT.*

By B. C. WILSON, Clarkson.

The patient is a male, 58 years old, height about 5 feet 8 inches, weight about 165 lbs, occupation farmer, habits good, family history negative, personal history absence of any past or present history of indulgence in alcoholics or any other vicious habits, never sick since childhood, present illness dates back ten years, with intervals of remission of all symptoms and apparent cure for several months in each year to be followed by a return of all former symptoms, has followed this cycle for ten years during which time he has been under my care, and according to his statement has not consulted any other physician on account of this illness.

A thorough physical examination reveals an absence of all symptoms referable to the nervous system, his reflexes both superficial and deep are normal, tactile sense and localizing perception normal, he has no tremor, no ataxic symptoms nor Rhomberg symptoms, pupils are symmetrical responding to both light and accommodation, heart, lungs, liver and spleen, negative.

General appearance of patient healthy, body apparently well nourished, an absence of any cachexia or emaciation, stomachic digestion excellent, no indication of either hypo- or hyperacidity, no analysis of stomach contents has been made, the stools have been analyzed for possible intestinal parasites but no examination has been made for occult blood.

The active symptoms complained of are obstinate constipation and pain in the upper abdomen, examination of the upper abdomen reveals an area of circumscribed tenderness on palpation, absence of tenderness in the region of the gall bladder and absence of any tumor formation.

Peculiar features of the case: First; the pain complained of recurs each day about 3 P. M., and lasts for about three or four hours without relief continuing for a period of several weeks or months, not usually excruciating but sometimes severe enough to confine patient to his room for several days at a time but unattended with increase in temperature or acceleration of pulse rate; patient has never complained of pain at night, in the early morning, and rarely in the forenoon.

Secondly: No form of diet either liquid or otherwise kept up persistently for weeks has had any effect whatever in the relief or mitigation of the pain.

Third: Purgatives administered for the relief of the constipation nor any other form of

*Read before the Muldraugh Hill Medical Society.

medication has not had any apparent effect, beneficial or otherwise.

Fourth. A peculiar feature we note is seasonal influence, patient is comfortable and free from pain during the summer and fall and acquires all his symptoms again in the winter and spring, to be relieved again with the advent of summer and fall, and has pursued this course during the ten years he has been under my care.

In conclusion we venture the diagnosis of ulcer of the duodenum, and will ask the gentlemen present to discuss the possibility of a mistaken diagnosis and suggest a more probable one, and to discuss the seasonal peculiarity of this case.

CASE REPORT.*

By C. L. SHERMAN, Millwood.

Mr. L. C. L., age 33, married; occupation, grocery clerk.

Family History. Father, mother and one sister living and well.

He had one child to die at the age of three weeks of some spinal lesion.

Previous History. He had the usual infections of childhood. Typhoid fever at the age of twenty-three and some little trouble with sore throat occasionally, possibly mild tonsillitis. No injuries and no operations.

Habits. Uses no tea, coffee, tobacco or alcohol, but eats rapidly, masticates poorly, is very nervous and sleeps poorly.

Present Illness: Present illness commenced sometime in January of this year. He came to my office one night complaining with his heart and poor circulation as he described it; on a casual examination I found heart normal, pulse 84 but full and regular, though his stomach was considerably distended with gas. I gave him some simple remedy to get rid of the gas and possibly followed it with a mild cathartic, so the day following he sent his wife back and said he wanted some pepsin for his stomach, and I sent him some elixir of pepsin with hydrochloric acid, and the next time I heard from him he was in Louisville consulting a stomach specialist. In a couple of days he was back home and sent for me again. This time I found him complaining with his head, gas in his stomach and a numb feeling, slight tenderness in the epigastric region. I had him continue the treatment that he had brought with him from Louisville, which was an anacid, and a mild laxative at bed time. After a few days he made the second trip to see his specialist, who put him on sodium bromide, tincture belladonna and tincture valerian. He brought a copy of the prescription home with him. I

kept him on this while I undertook to find out something more about his case and the following is a more careful history with the findings:

The predominating symptoms are, headache, mostly in the top of his head, bloating and a numb feeling, occasional pains in his limbs, quite a little vertigo, appetite poor, a bitter taste in the mouth most of the time. Thirst is decreased, the throat gets dry at times which causes some dysphagia, the bloating comes on usually from a half to an hour after eating, some nausea but seldom vomits, often makes himself vomit by running his finger down his throat, the quantity is generally small, bitter in taste and green in character, this gives him some relief; bowels always constipated, has never noticed any blood in stools, or any tarry character, and none in vomit. There are no symptoms referable to the respiratory apparatus, some slight pain at times after urination. No fever and no chill.

Physical Examination: Patient is of normal build, development and nutrition with normal temperature, pulse and respiration, skin is normal, the tongue thin, white coat and breath foul. The respiratory apparatus and heart are normal in every respect. Systolic blood pressure is 105, diastolic 85. Abdomen is normal in shape and fullness, there is no rigidity, no tumors but quite a little tenderness in the epigastrium. Stomach is normal in size and position and also the liver, spleen and kidneys as far as could be made out, no tenderness over the gall bladder. The gait is normal, Romberg negative, coordination good, no contractures; no chorea; reflexes all normal; no areas of anesthesia or hyperesthesia.

Gastric Analysis: One hour after an Ewald test meal, 100 c.c. of contents was removed from the stomach. Triturations were as follows: free Hcl. 38, total acidity 56, free acid and acid salts 42, combined Hcl. 12, organic acid and acid salts 4, lactic acid none.

Urinalysis: Recent specimen amber color, or a little redder than amber, reaction acid, specific gravity 1040, no albumen, no sugar, no blood, no pus, no casts, trace of indican, acetone at one of four examinations, quantity in 24 hours 16 to 40 ounces.

Blood Examination:

Hemoglobin (T. W. Tallqvist)	98%
Red Blood Cells	6,700,000
Polynuclear Neutrophiles	71%
Lymphocytes	17%
Large Mono-nuclears	None
Transitionals	11%
Basophilic	1%

No Malarial organisms were seen.

X-ray Report: The Gastro-intestinal tract was studied fluoroscopically and radiographic-

*Read before the Muldraugh Hill Medical Society

ally after the ingestion of a barium lactone mixture. The examination immediately after the ingestion showed a hypertonic stomach, in its normal position, medium size, normal mobility, normal peristalsis. The pylorus was normal, patency free and opening immediately. The duodenum was visualized, was normal in position but the bulb was somewhat deformed. The examination after 6 hours showed a large residue in the duodenum.

Faecal Analysis: Specimen was secured after the patient had taken a dose of Epsom salts. This of course was of a watery consistency containing few food remnants and some mucus. Occult blood was strong positive to benzidine. Microscopically, many leucocytes and red blood cells and very small epithelia were seen.

Second Stomach Analysis: Showed free Hcl. 40. Strongly positive to benzidine, microscopically many yeast and moderate number of red blood cells were seen.

Second Blood Count: Showed 7,820,000 red blood cells, leucocytes 5,667 and the remainder of the count practically the same as before.

Diagnosis: The history of the gastrointestinal disturbance lasting three months with the epigastric tenderness as the chief objective symptom on physical examination with the free blood cells in the gastric contents and both pus and blood in the feces, polycythemia with a high hemoglobin content and a large six-hour residue in the duodenum, only points to one thing, namely, ulcer of the duodenum.

NEWS ITEMS AND COMMENTS

Dr. B. A. Washburn received an appointment from Surgeon-Major Robert A. Patterson, of Washington, D. C., in charge of First Aid Division of the War Department, as official First Aid instructor for Paducah and McCracken county.

Dr. P. W. Bushong of Edmonton has been appointed Chairman of the Auxiliary Medical Defense Committee for this country. The duties of Dr. Bushong will be to urge young men of the county to join the service of his country.

Fairview narrowly escaped a conflagration May 10, when the office of Dr. W. S. Petrie caught fire from burning wood falling out on the floor, and a large hole was burned in the floor and side of the wall before it was discovered.

The War Department has notified Dr. Frank T. Fort, a Captain of the Medical Reserve Corps of the United States army, that he will be a member of the first detachment of American surgeons to go to the battle front in France. Dr. Fort for the past few weeks has been engaged in examin-

ing applicants for the training camp for reserve officers to be opened next week at Fort Benjamin Harrison, Indianapolis.

Green River Medical Society composed of Marion, Green, Adair and Taylor counties which meets tri-annually met May 10 at Dr. J. Atkinson's office in Campbellsville. A number of prominent physicians from Louisville, Lebanon, Greensburg and Columbia attended.

The Mason County Medical Society held a meeting May 20 in the Central Hotel for the purpose of meeting the doctors who will be present in Mason county during the next few months in charge of the Sanitary Survey.

Dr. E. R. Bush, of Winchester, received from the War Department at Washington a Commission in the Medical Reserve Corps of the United States Army. The appointment carries with it the commission of the rank of First Lieutenant in the army.

The Warren County Medical Society met at the City Hall May 9 with a large representation of doctors present. Dr. E. Rau read a paper on Focal Infection of Nose and Accessory Sinuses. Dr. F. D. Reardon also read a paper on the X-ray on Diagnosis in Focal Infection.

Dr. Allen G. Caldwell, 723 Madison avenue, Covington physician, and Miss Antoinette Yeager, Cincinnati, were married May 17, at 4 o'clock in the parlors of Rev. Logan B. English, pastor of the Madison Avenue Baptist Church, Covington. Dr. and Mrs. Caldwell will reside in Covington.

Dr. W. B. Dunn, of Danville, was instantly killed when a revolver dropped from a coat which he was carrying and was discharged, the contents entering his breast. He was leaving the residence of Michael Bodner, where he had been called to see a patient, and the accident occurred as he stepped out of the door onto the front porch. He was 46 years old and was valedictorian of the class of 1891 at Centre College.

Dr. S. T. Brooks, who has been practicing medicine in Fleming county for several years, has rented the offices vacated by Dr. W. T. Willis, in the Rogers building, and will practice at Mt. Sterling.

Optochin Hydrochloride.—**Ethyl-Hydrocupreine Hydrochloride.**—The hydrochloride of optochin (see above). It has the therapeutic properties of optochin, but is soluble in water. For application to the eye and instillation into the conjunctival sac a freshly prepared 1 to 2 per cent. solution in water is used. Merck and Co., New York.—(Jour. A. M. A., March 3, 1917, p. 713.)

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W. H. LONG*Louisville*NEXT MEETING STATE ASSOCIATION.
ASHLAND, 1917

COUNTY SOCIETY REPORTS

Harrison—At a call meeting of the Harrison County Medical Society, May 18th, all the physicians agreed to divide equally with the family of the doctor who goes into the service, such fees that they may receive from his patients while he is absent and also agree to insist that his patients return to him when the war is over.

J. E. WELLS, Secretary.

Boyd—The Boyd County Medical Society met in Ashland, on May 14, 1917.

After transacting other business that came before the society, it voted unanimously in favor of an agreement amongst all physicians present, that they will care for the practice of any of its members who join the army, and will pay them or their families one-third of their collections for this practice.

J. M. PRICHARD, Secretary.

Bath—The Bath County Medical Society convened with Vice President J. K. Wells in the chair and following members present: A. W. Jones, A. W. Walden, H. S. Gilmore, F. P. Gudyell, H. J. Daily and J. S. Goodpaster. After a discussion of clinical cases a motion was made and seconded that the physicians who remain at home should take care of the practice of those who went abroad and give one-third of the proceeds to family of the same. The motion was unanimously carried.

There being no further business we adjourned.

H. J. DAILY, Secretary.

Barren—The Barren County Medical Society met in regular session in Dr. Botts' office, Glasgow, with the following present: Howard, Botts, Siddens, Miller, Jones, Jordan, C. C. Turner, E. D. Turner, Porter, White, Depp, Biggers, York, Smock, Acton, and Taylor.

The society was called to order by President Howard.

There being no papers, clinical reports were called for.

J. B. White reported an interesting case, the patient being a child three years old, subject to convulsive seizures, apparently caused by worms which passed in considerable numbers at irregular intervals; the interesting feature being that the spastic manifestations come on in the dark of the moon, and generally at night. The correctness of this is attested by the parents of the child. The phenomenon was explained by Dr. C. C. Turner in a satisfactory way.

E. D. Turner reported a case of palmar abscess which he treated successfully by free incision, drainage, and soothing applications.

J. C. Jordan reported a labor case which presented some unusual features. This and the preceding cases brought out live discussions by sev-

eral members, proving the interest felt by the average Barren County doctor in professional work.

The reference concerning our July social meeting was taken up. A motion was unanimously carried that we request Dr. J. N. McCormack of Bowling Green, and Dr. W. A. Bolling of Louisville, to deliver addresses here July 18th, in the afternoon and evening, details to be arranged later.

A motion was made and seconded that we the members of the Barren County Medical Society agree to attend to the practice of any of our members who may join the army, and that we will pay to them or their families one-third of the collection for such practice. The motion elicited a number of patriotic talks, and was carried without a single opposing vote.

There being no further business, the meeting adjourned to meet in Glasgow, June 20th, 1917.

J. MORGAN TAYLOR, Secretary.

Caldwell—At a meeting of the Caldwell County Medical Society the following resolutions were passed:

Whereas, the Caldwell County Medical Society has had its ranks invaded by the Grim Reaper, Death, visiting his displeasure on our fellow practitioner, Dr. J. A. H. Miller, of Princeton, Therefore, be it

Resolved, That this society honors him as one of its charter members, and desires to express its deep sorrow at his sudden death, at the height of his usefulness, even though he had passed the prime of life.

Resolved, That we commend his affable manners, his untiring energetic spirit, his devotion to his work, his deep concern and sympathy for those to whom he ministered, as virtues worthy of our best thoughts and emulation.

Be it further resolved, That the Caldwell County Medical Society attend his funeral in a body, and that a copy of these resolutions be spread upon the minutes of the society, and a copy furnished the family, and the Kentucky Medical Journal, and to the Leader, with request for publication.

W. L. CASH, Secretary.

Campbell Kenton—The following resolutions were passed by the Campbell-Kenton County Medical Society:

Whereas, some of our Fellow Practitioners have offered their services to our Government in this our Country's greatest trial, and been accepted, and others of us will be called upon to do the same thing, and by so doing are making great sacrifices, not only financially, but domestically, and maybe sacrificing their lives for the common good of all of us.

Now, therefore, be it resolved, that those physicians remaining at home show their patriotism

by sharing some of the sacrifices in protecting the practice of those going to the front.

1st. By inquiring of every new patient that comes to them, or them are called to. Who is your physician, and has he gone to war?

2nd. All fees collected from patients whose physician is serving his Country to be paid 1-2 of the gross fees collected, either to said physician upon his return, or his family as he may direct.

3rd. That upon return home of said physician all his patients be returned to him, and all physicians having treated such patients, positively refuse to treat them longer.

4th. That those physicians going to the front who hold offices, such as Health Offices, and other salaried or feed positions, ask for leave of absence, and those appointed to fill said offices in their absence pay to said physician or his family, as he may direct 1-2 of said salary, and upon his return relinquish the office to him.

Furthermore, be it resolved, That a copy of this resolution be sent to each member of the Campbell-Kenton County Medical Society, and those physicians of both Campbell and Kenton counties not members, to be signed and returned to the secretary as evidence of his acceptance of above agreement, and same to be kept by him for future reference.

F. A. STINE, Secretary.

Christian—The Chritsian County Medical Society met in regular session Tuesday, May 15, 1917, at the Carnegie Library.

The following program was carried out:

J. L. Barker, "Ulcer of the Stomach."

Austin Bell, "Lessons from the Past."

F. M. Brown, "Ophthalmic Medication."

These were splendid papers and a large attendance was present.

The following physicians were present: Drs. Brown, Barker, Bell, Beazley, Caudle, Gaither, Thomas, Wright, Williams, Harned, Woosley, Johnson, Southall, Woodard, Frye, Riley, Sargent, Reynolds, Watts, Lacey, Brandon, Ezell, Fozzell, Gates, Stites, Rice, Croft.

J. W. HARNED, Secretary.

Franklin—The Franklin County Medical Society met with Dr. Helm June 12th at 6:30 P. M. in social session. In the absence of both president and vice president, Dr. Helm was appointed president pro tem.

Members present: Drs. Helm, Williams, Montfort, Coblin, Mastin, Fish, Keller, Heilman, Patterson, Minish, J. P. Stewart, Coleman, and visitors, Nurses, Farmer and Hunt.

On motion reading of minutes of previous meeting was dispensed with. Reading of communications from Dr. Rupert Blue, president of the medical department of the army, requesting that all the doctors of the society under 55 years of age, be enrolled as ready and willing for service

in any capacity required, which matter was discussed and on motion final action was deferred till next meeting. The name of Dr. Sleet, physician to the reformatory, was proposed for membership and referred to the censors to report at next meeting. Other routine matters were acted upon and disposed of. An invitation from Dr. Dorsey of Millville to the society to meet with him at his residence at high noon on July 10th in social session to enjoy a fish fry, at which time he asked the privilege of inviting the membership of the Woodford County Medical Society to meet with us and also the request that each physician bring his wife or sweetheart with him to enjoy the felicitations of the occasion. On motion of Dr. Minish a committee was appointed to revise the schedule of fees for the physicians of Frankfort, with instructions to report at the next meeting, the chair appointed on said committee, Drs. Minish, Fish, Heilman. It is further ordered that the Round Table proper be dispensed with at the July meeting as the object of the meeting is to renew old friendships and form new ones and conserve a spirit of friendliness between the doctors' families of the two counties. On motion, the thanks of the society was tendered Dr. Helm and his splendid wife for their hospitality and generous entertainment, which was unanimously adopted by a rising vote.

Adjourned.

U. V. WILLIAMS, Secretary.

Harrison—The Harrison County Medical Society held a special meeting May 17, 1917. At this meeting it was unanimously agreed that the following named physicians would take care of any physician's practice who joined the army and will pay them or their families, one-half of the collections from such practice, and further resolved, that when they return we will do all in our power to have these patients return to their former physicians, and in any way assist them in reestablishing their practice in this county. Signed by Drs. Rees, N. M. Moore, Martin, Wells, Smiser, Melvain, Morgan, Wood, McDowell, Petty, Wyles, Beckett, Swinford, Todd, Carr, Givens, W. B. Moore, Bland.

W. B. MOORE, Secretary.

Hart—The Hart County Medical Society met in Munfordsville, May 8, 1917, with the following members present, L. E. Combest, F. Edwards, J. J. Adams, W. F. Nichols, J. W. Craddock, G. W. Ford, J. H. Hester, Chas. K. Beck, W. W. Bowling and Chas. H. Moore. President Honaker being absent, Dr. Edwards was called to the chair.

The minutes of the previous meeting were read and approved.

Chas. K. Beck read a paper, "The Rural Physician and the Diagnostic Laboratory." The paper was enjoyed very much and was discussed

by most of the members present. Special attention being given to autogenous vaccines.

L. E. Comstock gave the McMichael method of treating tuberculosis with tuberculin, also gave his experience with the treatment. He places much stress on an early diagnosis, with rest, and carefully selected tonics.

C. H. Moore places his faith in rest and forced feeding.

J. H. Hester exhibited a new instrument for the determining and correcting of errors of refraction, also discussed the various forms of headache, especially those produced by astigmatism and sinus infections.

The society adjourned to meet again June 5, 1917.

CHAS. H. MOORE, Secretary.

Hickman—The Hickman County Medical Society, being in regular session June 7th, offers the following resolution:

First. That this society offer its services to the American Reserve Corps in aiding and assisting in any way in the defense of its flag, in the contest in which it has entered for the defense of its liberty and freedom.

Second. That we hereby agree to solicit eligible members of the society to offer their services and apply for application papers and an examination.

W. W. RICHMOND,
E. W. HOWELL,
CHAS. HUNT,

Committee.

Lyon—The Lyon County Medical Society met at Eddyville, May 21, 1917, in called session. Resolutions offered and passed as follows:

Owing to the fact that the average salary of the Lyon county physician will not exceed \$2,000 per year, we deem it unwise to give one-third of any physician's business to him or his family in case he should be called to service in the army, but we further agree in case of necessity to take care of the family of any or all physicians that may be called to service in the army, for the length of time they may be on duty, and who are members in good standing of the Lyon County Medical Society.

Members present, Drs. Kingsolving, Hussey, Phillips, Travis, Travis and Molloy. Our last regular meeting was held May 15.

L. P. Molloy read a paper on "Appendicitis."

Discussed by all the members present.

Glad to note that all physicians in our county are members in good standing of the Lyon County Medical Society.

L. P. MOLLOY, Secretary.

Marshall—The officers of the Marshall County Medical Society for the year, 1917, are as follows:

E. D. Covington, Hardin, President; H. T. Car-

ter, Gilbertsville, Vice President; L. L. Washburn, Benton, Secretary.

Will send an account of the meeting in a few days.

L. L. WASHBURN, Secretary.

McCracken—The McCracken County Medical Society met in the Board of Trade rooms May 24, 1917, with the President, J. B. Acree, presiding.

Twenty-one of the society's membership being present.

Minutes of the previous meeting read and approved.

P. H. Stewart, chairman of committee on resolutions read the following which was unanimously indorsed by the society:

"We the members of the McCracken County Medical Society offer our services as Physicians and Surgeons to the United States of America in any capacity which we may prove useful."

And as further evidence of our good faith, we herewith request application blanks that we may take examinations at such time as may be convenient to the proper authorities.

We further pledge ourselves to attend to the professional duties of any member of the McCracken County Medical Society who are called to active duty, giving 1-3 of such collections to their families, also to return said patients to said doctors on their return.

P. H. Stewart, Acree and Rivers, appointed as a committee to solicit enlistment of the members for the Army.

W. H. PARSONS, Secretary.

Oldham—The Oldham County Medical Society met in La Grange, May 24, 1917, at a called meeting and report on all those doctors who may be in the army service that a unanimous vote to contribute to the wife and family of all such be paid one-third of all cash received from the patients of said physician. Also all physicians eligible to register be advised to go to Bowling Green at once and stand such examinations. Also the vital statistics cause received a careful inquiry into.

R. B. CASSADY, Secretary.

Scott—Special meeting of the Scott County Medical Society met at the City Hall in Georgetown Thursday morning, May the seventeenth. In the absence of the President, Vice President William Mason presided over the meeting.

Those present at the meeting were Drs. Coffman, Pack, Allphin, Knox, Porter, Barlow, Heath, Mason, and Johnson.

A communication from the Secretary of the State Society was read urging our society to adopt the plan that has been adopted in other states whereby the men that stay at home from the war can help to bear the burden by caring for the practice of any members who are away with

the army and they will pay them or their families one-third of their collections for this practice.

It was then moved and seconded that the Scott County Medical Society adopt the suggestion made, which was unanimously carried.

J. E. Pack then read a communication from Dr. Blackerby urging all the doctors to look over their records of births and deaths and if there are any that have not been recorded to report them at the earliest possible moment.

Moved and seconded that the secretary be instructed to write to our representative in Congress urging him to vote and lend his influence to the passage of H. R. 4190 which was introduced May 4th, 1917, and designed to abrogate the patent on Salvarsan. Carried.

There being no further business the meeting adjourned.

H. V. JOHNSON, Secretary.

Russell—The regular meeting of the Russell County Medical Society was held in the parlors of the Holt Hotel, Jamestown, May 5th, 1917.

The following members were present: Drs. Flanagan, Neathery, Hammond, Rowe, Combest, Scholl, and quite a number of the laity.

At 10:30 a. m., the meeting was called to order by Vice President J. S. Rowe, the President not having arrived. However Dr. Hammond arrived at noon and proceeded with the afternoon session.

Called to order by Dr. Rowe.

Reading of the 27th Psalm and prayer by Rev. Guinn, of the First Christian church of Jamestown.

Welcome address by J. N. Meadows, attorney.

Response by Rev. Osborn.

Reading of minutes of last meeting by the secretary. On motion of Dr. Flanagan, the old officers of 1916 were indorsed and re-elected until December, 1917.

Revs. Guinn and Osborn gave a good talk and pledged themselves in their talk to still help us keep up the good work.

Then all the doctors "got busy" trying to get the floor and most all did, as I saw most all on foot at once to give advice and do all they could for the suffering. It is planned for the society to give public health meeting of instruction of How to Prevent Disease in different parts of the county during the season. The time and place of such meeting will be held in such places and times that the President of the society thinks best. So if any neighborhood or locality desires the meeting I would suggest that you write or call on the President, L. D. Hammond, Irvington, who will be glad to give all desired information and he will make arrangements for meeting. Of course it is the purpose of the society to meet regularly as it has for over 27 years, but the society thought best to make a health campaign during the season. This society is not on the beggar list, but we are now begging as we have been for over 27 years, begging the people to at-

tend our societies for it is for the laity more than the doctor. Remember the doctors lose several days from home and practice and hotel bills, etc., each year for your benefit. So it seems to me a man up a bush could surely spare an hour or so to hear something about Health and Prevention of Disease. Please don't think I am dictating but the above is a suggestion to the good citizens of Russell County, the best place in the world, by one who was born and reared in the good old town of Jamestown and, of course, I love all enough to do my part to help keep off sickness, death and disease. I do hope the laity will attend all medical meetings and help make them better. It will help the sick keep off sickness, live longer and happier.

The society had not met since December, owing to bad weather and it was a very busy day for the society. However, during the bad weather since December, the society, I think, has been getting out a revived edition of itself. It is, I think, to be thumb indexed, with the same leather binding it has had for twenty-seven years. There will be no edition for sale, but one may be had by talking to any of the members of the Russell County Medical Society, as each member carries one with him daily and wears it for a liver pad at night.

All the doctors of the county are members but one. All present but three. I thought I would get out an attachment for Drs. Tartar, Lawrence and Blair, to show cause why they were not present, but the President and other members begged for them and said they always had attended and they would see that they were present from this on.

The secretary arrived at Jamestown the evening of the 4th, to be ready for the strenuous work of the next day, but owing to using cigarettes my fingers were yellow and burnt so I could not cipher and of course I could not get any more cigarettes or papers at the stores so I got nervous. The next morning I put on my "half moon" spectacles upside down and this caused me to look under them and the gold chain got tangled around both of my ears and mustache, so I could not write nor read nor hardly speak a good word. Then I thought if I could get a small drink or dose of Dr. Filander Dostiek's Four Horse Power Lung Healing Balsomic Oil (commonly known as booze, red eye, mountain dew, stump water, etc.) it would quiet my liver and spleen and other digestive organs, so I could write and spell good. But after thinking a moment and asking several if there was any of the above medicine in town, they said no. I knew, too, that the county is bone dry or dry as a bone, and a non-moisture producing nor using district. So I contented myself and took down the minutes of the meeting. At 3:30 the society adjourned and so far as I have heard they all arrived at home with all the tacks in their shoe heels and feeling fine for the time

of year, but this is eleven days of May and every hour has been bad. It is dogwood winter, blackberry winter, and linen breeches winter and the Lord only knows just when we can sing "It was in the month of May when the lambs did skip and play, etc."

J. B. SCHOLL, Secretary.

BOOK REVIEWS

Diseases of the Stomach, Intestines and Pancreas.—By Robert Coleman Kemp, M. D., Professor of Gastro-intestinal Diseases at the Fordham University Medical School. Third Edition, revised and enlarged. Octavo of 1096 pages, with 438 illustrations. Philadelphia and London: W. B. Saunders Company, Publishers, 1917. Cloth, \$7.00 net; Half Morocco, \$8.50 net.

In view of the excellent works on diseases of the stomach and intestines that has been placed before the medical profession, the publication of a new book on these subjects might almost seem to be superfluous. From a great accumulation of material, it is often difficult for the general practitioner to select simple and practical methods, and it is the endeavor that this volume should render service in this special direction. The volume is abundantly illustrated. A chapter is devoted to Diverticulitis, which has become an important subject.

Text Book of Ophthalmology.—By Hofrat Ernst Tuchs, Professor of Ophthalmology in the University of Vienna, authorized translation from 12th German Edition by Alexander Duane, M. D., Surgeon Emeritus, Knapp Memorial Hospital, New York. With four hundred and sixty-two illustrations. Fifth Edition. J. B. Lippincott Company, Publishers, Philadelphia and London. Price \$7.00 net.

The translation now presented to the reader has been made from the 12th edition of Professor Fuch's celebrated book. Besides numerous additions and corrections which Dr. Fuchs has inserted in all parts of the book and a number of new illustrations, there has been added a whole new part comprising some 60 pages which considers the general physiology of the eye, the pathology, etiology, symptomatology and treatment of eye diseases as a whole.

The United States Public Health Service suggests the following ways of making oneself ridiculously inconsistent: Repeat the Golden Rule and then sneeze in somebody's face; or, think that dog muzzling is cruel, and then marvel at the spread of rabies; or carefully select your brand of liquor and then feed your children unpasteurized milk or go camping out for your health and then place your toilet so that it drains into your water supply.

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EDITORIAL

URGENT NEED FOR 17,000 MORE ARMY DOCTORS.

The complaint comes from almost every section of the country that the younger members of the medical profession, many of them with few or no family or other obligations to keep them at home, and the class to be most benefitted by the experience to be obtained in the military hospitals at home and abroad, are failing to respond to the call to the colors, as the older physicians are so freely doing. In justification of this complaint the statement is freely made that the average age of volunteers for the Medical Reserve Corps now in attendance at the Army training schools is 40 years, and it is said that this is also borne out by the study of the facts in many countries in this and other states.

Devoting himself to the urgent needs of his department, and without special reference to this wide-spread complaint as to our younger men, in the Government's Official Bulletin of June 16th, Surgeon-General Gor-gas says:

"The Medical Corps must have 17,000 more doctors for the Army, and it needs most of them now. In Germany when the army has such a call the Government orders the doctors to join the colors, and that is all there is to it. This Government is loath to follow that example. Doctors coming into the Medical Reserve Corps are commissioned as first lieutenants, captains, or majors in the service, and are liable to be ordered to any duty required of their grade. The Surgeon-General's endeavor is to put each man where he is most needed and where his specialty will count most.

FOREIGN SERVICE THE ATTRACTION

"Foreign service is the attraction, and it will eventually fall to most of the corps. The examination of recruits and the care of their health through treatment and in a much broader way by sanitation is the matter of earliest importance, and it will be the first duty of many of the new medical officers.

"The United States needs more medical officers than France or Germany, because, through lack of universal military training, the difficulties of examining recruits will be multiplied many times, and because we wish to aid our allies and also give the best service to our own soldiers and sailors.

"The country needs more doctors now that they may be trained in military ways, in sanitation, and in the surgical methods developed by Dr. Carrel and other surgeons since the war began.

QUALIFICATIONS REQUIRED

"An applicant must be a graduate of a reputable medical school and be between 22 and 55 years of age. The annual pay of a lieutenant is \$2,000; of a captain, \$2,400; of a major, \$3,000; with an additional 10% in each case for foreign service besides quarters. Any physician who intends to join the Medical Officers' Reserve Corps should communicate with the chairman of the board most convenient to him.

"Never has there been a greater demand for sacrifice, but it is the sacrifice for country. The country is in the war to win, and no class is more needed at the present time than doctors.

CONDITIONS IN ENGLAND

"The surgeons of England and France need help both at home and in the field.

"English physicians have given themselves to the army so freely," says Col. T. H. Goodwin, R. M. C., "that in some of the more populous districts there is but one physician for 6,000 people left in England.

"The English surgeons have worked desperately. They frequently, after great military engagements, keep their boots on for a week at a time, working 14 and 16 hours a day. But they have learned their lesson; and where at the war's inception they detailed 20 medical officers and assistants to care for the sick and wounded in 500 beds, now with the aid of two more officers they give equally good care to a thousand."

"Col. Goodwin, who has been through the

war, beginning with the first expedition to France, and the great retreat from Mons, has been detailed to lend his great experience to the United States Medical Corps, and he unflatteringly advises the greatest possible number of medical officers at the earliest date. He flatly contradicts the story that 60,000 English doctors have lost their lives in the service, the total loss not being 2% of that number. There are only 12,000 surgeons in the English Army."

WILL OUR YOUNG DOCTORS WAIT TO BE DRAFTED?

The succeeding issue of the *Official Bulletin*, June 25th, emphasizing the pleadings and admonitions of the great Surgeon-General of the Army, quoted in the preceding editorial, and evidently hoping that medical men might yet be induced to volunteer at once in such numbers as to make a draft unnecessary, suggests the following alternative:

"Claiming that the volunteer system of recruiting physicians for the Medical Reserve Corps of the Army has proven unsuccessful, Major Karl Connell, Major Richard Derby and Captain Frederick Van Beuren, of the New York Committee for National Defense, Medical Section, have presented to the Council of National Defense a report urging the drafting of physicians selectively upon a basis of Federal classification by a special medical census similar to that recently secured in New York State.

CONSTITUTIONALITY ESTABLISHED

"At a meeting of the general medical board of the Council of National Defense here today Dr. Connell demonstrated that out of the 140,000 doctors in the United States less than one-half were available and desirable for military purposes. He stated that the policy of allowing or urging doctors to volunteer indiscriminately in the enormous numbers that are needed for medical officers in this war would result in confusion, waste and failure. This analysis of the Medical Reserve Corps in New York State clearly indicated that the volunteer system failed to preserve the integrity of the public health service or to protect the local community medical needs and that it neglected to consider the individual physician's family and professional connections.

"Dr. Connell urged that a selective medical draft, based upon special classification by census, would accomplish the desired result by bringing into the Army those best fitted for its uses and by leaving at home those physicians most needed by the community. The constitutionality of legislation required to legalize the draft of doctors has been established satisfactorily by an opinion from the Judge Advocate General's Office."

PRECAUTIONS AGAINST POLIOMYELITIS.

In the discussion of infantile paralysis at the recent meeting of the American Medical Association, frequent reference was made to the investigation and conclusions of the special committee appointed by Major Mitchell of New York City to aid the Department of Health in combating the epidemic of infantile paralysis in that city in 1916. The Committee was composed of Mayor Mitchell, Chairman; Dr. Simon Flexner, Vice-Chairman; and Dr. Haven Emerson, Health Commissioner of New York City; Dr. Walter B. James; Dr. Glenworth R. Butler, members, and Dr. Alvah H. Doty, formerly Health Officer of the Port of New York, who served as medical director of the activities of the Committee: all of the work being financed by the Rockefeller Foundation.

The conclusions of the Committee were based on a study of 5,496 cases diagnosed by the Department of Health as poliomyelitis, between July 17 and September 20, 1916, out of a total of 9,023 cases in Greater New York. On account of the scope of the infection last year and of the possibility of a recurrence of epidemic conditions or of sporadic cases at any time, it may be of interest now to summarize the conclusions of the Committee, which are as follows:

"1. Infantile paralysis is communicated by personal contact.

"2. Slight and non-paralytic cases are the most frequent sources of infection, as these cases arouse less suspicion and others come in contact with them.

"3. The disease usually develops from three to ten days after exposure.

"4. Previous good health does not give immunity from attack.

"The points which the committee emphasized in their report and which they considered of the most practical importance to parents, are these:

"1. Children who are ill should be kept away from others until it is definitely certain that the ill child has not a communicable disease.

"2. If one's own child develops suspicious symptoms, the child should be kept away from others till it is known that it has not a communicable disease.

"Early diagnosis of suspected cases and prompt isolation of the patient are held to be of the greatest importance to prevent the spread of the disease. In supplementary investigations the committee could find no substantial evidence to show that infection was spread from contaminated sources of milk supply or other foods, or that the disease is carried by lower animals or insects or by clothing and other extraneous objects."

A TRIBUTE TO THE DOCTOR.

The following editorial recently appeared in the Peoria (Ill.) Journal:

Twelve Chicago doctors enlisted recently for service which will probably take them to the European battlefields. According to the news reports, four of these doctors give up very large practices—and, as is generally known, a doctor's practice when once given up cannot be regained by the mere asking.

There is nothing especially unique in the announcement that twelve Chicago doctors enlisted for war service. Peoria doctors have done the same thing, and doctors in thousands of cities throughout the country have voluntarily given up more or less remunerative practices in order to offer their services to their country during war times. However, the enlistment of these thousands of doctors bears silent testimony of the rare traits which have characterized doctors since the very days of doctor pioneering.

In an address a few days ago, Henry P. Davison, chairman of the war council of the American Red Cross, paid the following tribute to the doctors: "The attitude of the doctors at this time is greatly gratifying. Unselfishness and patriotism distinguish them. The leaving of an established practice in order to do Red Cross work with practically no pay or in order to do field work at an insignificant salary surely puts the doctors down as men devoted to the best interests of their country."

Mr. Davidson might just as well have gone further. Not only is the doctor who leaves for war duty an unselfish and useful man but he comes from a class which does as much service for humanity, perhaps, as any other class—in times of peace as well as war.

Here's to the doctor. If he makes big money he earns it. He never turns down a sick patient because that patient does not happen to have a bank book full of money. He works just as hard to relieve a poor man from suffering as he does to give relief to the millionaire. He knows the family woes and the family griefs—and he keeps them to himself. If he complains at being called from his bed at 3 o'clock in the morning, he doesn't carry his complaints to us.

A LOW COST DIETARY.

For the information of physicians to whom the publication "Science" is not available, and in conformity with the spirit of preparedness which is in the air, we reprint from an article by Graham Lusk, the eminent bio-chemist, a "low-cost meatless dietary of high caloric value designed for a family of five persons, the father at work and the mother doing household work. Potatoes with their valuable alkaline salts, had to be excluded from the diet because of their prohibitive price.

BREAKFAST.

Corn meal mush, 1 fried (milk for children and corn syrup for adults).
Bread (or toast).
Oleomargarin.
Coffee (for adults).
Stewed prunes.
Orange juice for baby.

LUNCHEON OR SUPPER.

Pork and beans 2 (bean soup for young children).
Bread.
Oleomargarin.
Tea with milk and sugar for adults.
Milk for youngest children.
Cereal coffee or cocoa for older children.
Sliced bananas with sugar.³

DINNER.

Lentil soup.⁴
Boiled Rice.⁵
Tomato catsup.
Bread.
Oleomargarin.
Tea for adults.
Milk for youngest child.
Dried apple pie with cheese for adults.
Dried apple sauce for others.
1. Or oatmeal, or hominy, or farina or buckwheat cakes.
2. Or creamed dried beef on toast.
3. Or stewed dried peaches or the bananas may be boiled in their skins.
4. Or potato, or bean, or pea soup.
5. Or spaghetti, or macaroni (with cheese) or baked split peas with bacon.

Sharpe holds that, contrary to the prevalent belief, the majority of cases of hydrocephalus are of the external type and not of the internal. The youngest patient, was 10 days old; the oldest 4. The younger the patient, the better will be the functional end results, because the effects of pressure upon the brain have not yet developed. The young patients also stand the operation better than the older ones. The operation consists in inserting six linen threads into the ventricle in the internal type and into the subarachnoidal and subdural spaces in the external type: the ends are brought out through the temporal muscle and fascia beneath the scalp in a stellate manner. Of the forty-one patients, thirteen died. In the remaining twenty-eight the results are "encouraging." All have been improved and are improving. The test evidence that improvement has resulted is shown in the fact that in all the changes in the optic disc have improved.

SCIENTIFIC EDITORIALS

SYPHILIS OF THE PANCREAS.

Since both syphilis and tuberculous of the pancreas are rare affections, there has not been a great amount of study or research into their pathology, symptomatology, etc. In fact, prior to the discovery of salvarsan, but few cases of syphilitic pancreatitis had been reported and these were mostly of congenital form. Some pathologists doubted whether there was such a thing as acquired syphilitic pancreatitis. There is no doubt that the introduction of salvarsan was the cause of a vast amount of research and experimentation; all forms of syphilis were studied more thoroughly than ever attempted before. This impetus resulted in the case of syphilitic pancreatitis in the discovery of several cases due to acquired lues. From a pathological view point three forms may be designated: (1) a diffuse inflammatory sclerotic or indurative form, usually resulting in atrophy; (2) a gummatous form in which the normal tissue of the pancreas is replaced in local areas by typical gummatous tissue; (3) a sclerotic-gummatous or mixed type. Macroscopically one usually finds the pancreas quite enlarged, rather grayish and of a firmer consistency than normal. When a section is examined under the microscope some areas show well formed lobules and acini, but most of the lobules are poorly defined, the acini atrophic and few, being largely replaced by infiltration of cells of inflammatory type, which later in time gives way to interstitial connective tissue overgrowth; the epithelium lining the acini are thinned, the ducts dilated; larger or smaller areas of focal necrosis and gumma formation will be found, the extent of which determines under which of the above three classifications the case belongs. It is an interesting fact that in many cases the islands of Langerhans suffer much less than the glandular acini. The true clinical picture of syphilitic pancreatitis and particularly its differential diagnosis has not yet been established, the observations made up to the present not being sufficiently numerous or comprehensive for the establishment of definite conclusions.

From a review of the literature of syphilis pancreatitis we gather that the cases cited by J. Walter-Salis, Trinkler, Moynihan, Terrier, Steinhilber and various others were temporarily benefited by anti-syphilitic treatment, but owing to the fact that no autopsies were made in these cases the real cause of the disease was not absolutely determined. Also we note that syphilitic pancreatitis occurs in all ages, it would seem to be not infrequently among the late manifestations of syphilis.

The symptoms of syphilitic pancreatitis are

almost identical with other subacute and chronic inflammatory conditions of the pancreas, the more constant and important ones being glycosuria, steatorrhea, jaundice, fever, marasmus and pain in the pancreas or pancreatic region. Steatorrhea is not at all constant. We were able to find it reported in only 3 out of 15 cases. Glycosuria is much more frequent, 8 of the 15 having this symptom; also it usually appears early in the disease, while steatorrhea seldom occurs until the late stages. Jaundice is quite often met with especially in connection with syphilitic hepatitis. Fever is always a predominating symptom. Pain in the epigastric region is more or less severe and sometimes there are radiating pains in the spine; these pains may be accompanied by pain in the region of the liver with radiating pains in the right shoulder, suggestive of syphilitic inflammation of the liver or common ducts. Often we can palpate a hard mass in a pancreatic region, due to pancreatic enlargement; this swelling is usually non-movable and with definite margins.

Unless other symptoms of syphilis are present or the patient gives a definite history of infection the diagnosis of syphilitic pancreatitis will be hard to make; even a pancreatitis in a leucic patient may be due to some other cause.

M. L. RAVITCH AND S. A. STEINBERG.

Variations in Pulmonary Resonance.—George C. Shattuck (Boston Medical and Surgical Journal, April 26, 1917) states that slight differences in pulmonary resonance below the clavicle in front and at the apices and bases behind, which are common in chests that can properly be regarded as negative from a clinical standpoint and ordinarily are disregarded, are important when, for other reasons, the existence of pulmonary disease is suspected. Under such conditions they may lead the examiner to believe the disease is more extensive than it is, or they may be a factor in causing him to make a diagnosis of phthisis when it does not in fact exist. The variations of resonance discussed here are slight, and the importance of well marked dullness for diagnosis is not in question.

New York—Tuberculosis.—The New York workmen's compensation law provides for compensation for "accidental injuries arising out of and in the course of employment and such disease or infection as may naturally and unavoidably result therefrom." The commission decided that a workman who was disabled by getting wet, and "contracted a heavy cold and pleurisy, which developed into pulmonary tuberculosis," was entitled to compensation; and the New York Supreme Court affirmed the decision. (*Rist v. Larkin & Sangster*, P. H. R. June 30, 1916, p. 1719.)

ORIGINAL ARTICLES

ACCESSORY SINUS DISEASE.*

By GAYLORD C. HALL, Louisville.

It should be a source of gratification to the profession that the uncertainty and ignorance engendered by the meaningless and loosely applied term "catarrh" has steadily given way before the building up of a definite structure involving accurate diagnosis, knowledge of pathology, and successful treatment of sinus disease. Too much emphasis can not be laid against the application of the term catarrh to any disease of the nose. This many-shaped, argus-eyed monster of the patent medicine advertisement should be definitely abolished from the nomenclature of scientific men and definite terms should be employed to express the shades and degrees of pathology present.

The pathology in these cases may be confined strictly to the nose and sinuses or may extend to the neighboring organs, most commonly the orbit, optic nerve, brain, and ear.

The symptoms arising from disease in this region may be local, such as pain, discharge, etc., or aside from the general reaction of fever, increased pulse, temperature, etc., the symptoms may be remote, such as vertigo, dizziness, most marked when stooping, or a staggering gait. Sometimes through absorption they give rise to joint symptoms, or profound mental disturbances that may be very distressing to the patient.

It is highly important that in these infections an early diagnosis be made and proper treatment instituted, since nearly all cases, if well treated, tend to rapid recovery. If untreated, they tend to become chronic, in which condition they are purely surgical. Early treatment, in most cases, tends also to limit both the extent and severity of the infection so that the patient is saved much pain and discomfort arising from the nasal condition and tends to escape the graver complications of extension into the orbit, ear, and brain, that severe infections left untreated tend to produce.

CAUSES OF SINUS INFECTION.

As in most other conditions, cancer, syphilis, tuberculosis and foreign bodies, in themselves are sufficient to produce diseases of the sinuses. Aside from these the general causes are chiefly such conditions as tend to interfere with the drainage and ventilation of the sinuses themselves. People with thin faces, high narrow nasal cavities and deflected septums are subject to sinus diseases. Diseased

teeth are a common cause. Nasal operations that require packing may be productive of inflammations of the sinns. The exciting cause of all sinus infection is, of course, the bacteria producing suppuration.

In children the disease most frequently follows the exanthemata. It may be well to remember in this connection that before the eighth year sinns infection plays a very small part in diseases of children since before that period the sinuses are so rudimentary and undeveloped as to afford but little opportunity for infection. This is subject to very rare exceptions.

In adults sinus infection occurs chiefly during epidemics of grippe and pneumococcus infections. It is commonest in the winter and early spring.

SYMPTOMS.

In acute cases there is usually pain though it may be absent. The pain is referred to the region infected as a rule though it may be present as general aching over the whole head.

It is always increased on stooping and in that position the patient may complain of great dizziness or vertigo and tend to pitch forward on his face. Sometimes disturbances of equilibrium are present when the patient is erect though usually not present when lying down. Headache is next in importance. This sometimes is characteristic, being directly above the root of the nose, occurring especially in the morning and tending to disappear as the day goes on, provided of course the secretion is drained out of the sinus. The headache is almost entirely a pressure headache and is relieved by the escape of pent up secretions. It responds but little or not at all to analgesics or opiates.

There is usually tenderness upon pressure under the orbital ridge in case of the frontal sinus; over the cheek in the case of the antrum; or between the eyes in the case of the ethmoid. The sense of smell is usually abolished or greatly diminished, and both sight and hearing may be effected. In acute closed empyema all the symptoms are greatly intensified.

In chronic cases the symptoms are those of chronic septic absorption complicated possibly with joint and heart involvement or symptoms referred to contiguous organs, that is, the eye or brain. It is of course understood that acute exacerbations of chronic suppuration will give rise to symptoms resembling the acute type. The local symptoms are usually a discharge of pus, varying in character; it may be with or without an odor which may or may not be noticed by the patient. It has been stated that suppurations of the antrum and ethmoid alone produce odor noticeable to the patient. The discharge may drop into

*Read before the Eagle Valley Medical Society, at Sanders 1916.

the naso pharynx or may discharge through the anterior nares. There is usually in the nose a feeling of fullness and constriction and an inability to breathe properly.

DIAGNOSIS.

The first question of importance to be decided is, are the sinuses affected, and secondly, which ones. The diagnosis is made by a careful questioning of the patient relative to previous symptoms referable to the nose which will be invariably designated "catarrh;" a past history of infectious diseases particularly influenza, or the acute exanthemata, or previous operative work on the nose. Questions that I invariably ask patients are the following: Have you had a nasal discharge? Is it in one nostril or both? Does the discharge appear in the naso pharynx or at the anterior nares? Is there any odor to the discharge? Is it increased by stooping over? Does it throb and give a sense of fullness while in that position? Does it appear in the morning and pass off about noon? This being the contra-distinction to an ocular headache which becomes progressively worse as the day advances. It is relieved by closing the eyes or being in a dark room? This being true of ocular headaches.

Next comes examination. The nasal chambers are carefully inspected. The presence of pus or crusts on either side of the middle turbinals or the state of swelling of the body is noted, for as all of the sinuses practically drain to the inner or outer side of that body, that is the key to the situation. Cocaine, adrenalin and antipyrine solution is now applied on cotton over the middle turbinate.

Pus present in the middle meatus, which persistently recurs after washing or mopping it away is indicative of infection of one of the sinuses. Leaning the head over a sofa with the suspected sinus uppermost is also a good method of obtaining a flow of pus from the mouths of the various sinuses. However, in some cases probing may be necessary to obtain pus and in others washing with a canula. In case of the antrum puncture in the inferior meatus with washing may be necessary before the diagnosis is established.

The naso pharynx should also be carefully gone over by posterior rhinoscopy for the presence of secretion in that locality. The presence of polyps, septal deviations, obstructions or other abnormalities are of course noted.

Areas of tenderness over the frontal sinuses, antra or between the eyes indicate the several locations of trouble. A deep seated pain situated at the base of the skull is often indicative of sphenoid disease. Another significant point is the dull ache in these situations, which comes on with the advent of damp,

heavy weather. This is particularly noticeable in cases of antral suppuration, when the pain is located directly under the eyes and is so constant that I have had patients say that they could tell when it was going to rain.

Proceeding with the examination the frontal sinuses and antra are carefully examined and studied by transillumination, the room being perfectly dark. Having determined the infection of the sinuses we now proceed to the answer of the second question, which ones are affected. This can best be determined by a few illustrative cases. If there is pain over the region of the frontal sinuses, tenderness on that side, a dark spot on transillumination with a discharge of pus from the anterior nares coming from the outside of the middle turbinal or even without the discharge in the early stages or in closed empyema we can definitely say that there is an infection of the frontal sinus.

If similarly the pain and tenderness and cloudiness on transillumination are referred beneath the orbit with or without a discharge to the outer side of the middle turbinate the infection is undoubtedly of the antrum of Highmore.

A deep seated pain between the eyes with discharge of pus to the outer side of the middle turbinal with absence of symptoms of frontal sinus or antrum suppuration is due to infection of the anterior ethmoid cells; while pus flowing from the inner side of the middle turbinal far up and back, the discharge going into the naso-pharynx, denotes posterior ethmoidal infection.

Deep seated pain situated at the base of the skull often accompanied by dizziness and symptoms of asthenopia and a discharge of pus into the naso pharynx denotes sphenoidal suppuration.

It must be remembered in this connection that these are but examples of isolated infection of the various sinuses. As a matter of fact in most cases, the antrum alone excepted, more than one set of sinuses is affected, in fact they may all be. The frontal sinus is notoriously liable to infect the antrum from the fact that the duct leading from the sinus is almost directly in front of that leading from the antrum, and pus may drain from the frontal sinus to the antrum by gravity alone. Likewise the anterior ethmoidal cells directly posterior to the frontal sinus and often encroaching thereon may be infected from the frontal.

Ear manifestations in accessory sinus disease are more an extension of the disease process through the Eustachian tube rather than a complication. It may terminate in suppuration of one or both ears with its attendant consequences.

Involvement of the orbit causing an orbital cellulitis, occurs chiefly through the corrosion of the orbital part of the ethmoid though of course such extension is possible by rupture of the frontal sinus or antrum, though these complications are exceedingly rare.

The disease causes pain, swelling, protopsis, and later on fluctuation develops, usually at the inner angle of the orbit. Sometimes it is possible to relieve the condition by ablation of the ethmoid and drainage through the nose though more often an incision at the inner angle of the orbit with drainage is to be instituted. The chronic process called mucocoele likewise points in the same situation. Here there is a gradual dilatation of the sinuses with erosion of the orbital wall due to constant secretion from the mucous glands while the escape of this secretion is blocked off from the nose. Incision frees a large amount of thick, glary, mucous often of a yellowish color. The cells are enlarged and usually lined with a thick, dark red, or a bluish membrane, which should be removed.

Just as erosion of the sinus wall involving the orbital cavity may take place so erosions involving the bony wall separating the sinus from the cranial cavity may occur. This is probably commonest in the case of the frontal sinus and the pathology induced may consist of a pachymeningitis externa and diffuse leptomeningitis, extradural abscess, or abscess in the frontal lobe of the brain. Complications involving the loss of sight may be caused by a great many different things. We may have an optic neuritis, a retrobulbar neuritis, an infection of the choroid through a thrombophlebitis, or to a simple toxemia.

The severity of the lesions may vary all the way from complete loss of vision to simple weakness and inability to do close work. Quite commonly there is a scotoma and restriction of the visual fields.

TREATMENT.

The key note in the treatment is drainage. In acute cases measures adopted will depend upon the severity of the case. It is well to secure as complete rest as possible, preferably in bed. Put patient on a light diet. A brisk purge should be given and the bowels and kidneys kept active by administration of alkalies. If much pain is present the internal administration of analgesics, such as aspirin, phenacetin, etc., is usually given, though in my own experience the pain in sinus disease being due to pressure of pent up secretions, yields very poorly to the internal administration of agents given internally.

The local treatment consists in careful shrinking of the middle turbinal with the cocaine, adrenalin, antipyrine solution followed by inhalation of steam. The shrinkage

which opens the exits to the sinus and the inhalation of steam causes the outpouring of the secretion which relieves the pressure and quiets the pain. After the sinuses have been cleansed as thoroughly as possible the instillation of argyrol, drawn through the nose, is of benefit or some bland non-irritating alboline preparation.

This treatment is repeated several times a day, care being taken in the use of the cocaine, adrenalin, antipyrine solution that it is used neither too strong nor too often since this produces a reaction on continued use which may intensify the symptoms.

In acute antrum suppuration puncture through the inferior meatus and washing out the antrum repeated once or twice usually results in a speedy clearing up of the process.

In chronic sinusitis as in the acute type the chief point in the treatment is ventilation and drainage. In these cases, however, the treatment is purely surgical and the consideration of all the surgical measures advised for the relief of this condition would extend the limits of this paper far beyond the allotted time.

I close with the statement that in so far as it is possible all surgical procedures should have as their aim the relief of the condition with as little mutilation as possible, preferably through intranasal methods of operating, reserving external operations for the very severe cases that threaten life through extension to the meninges or to the orbit or where such extension has already occurred.

Another Shortage of Salvarsan.—The indications are that the supply of salvarsan and neosalvarsan in this country has again reached the point of exhaustion. Congress, which made our patent law, has the power to suspend the patent on any preparation that the patentee is unable to, or does not supply, when such suspension is in the interest of public health, and it should suspend the salvarsan patent. In the meantime it is to be hoped that the Dermatologic Research Laboratory of Philadelphia will again supply the product as it did during the previous salvarsan shortage.—*Jour. A. M. A.*, March 10, 1917, p. 785.

Morphine is a life-saving drug in certain surgical complications. In post-operative pulmonary edema or congestion, for example, it usually accomplishes more than a whole battery of alkaloidal stimulants. In all other acute, threatening post-operative conditions in which the patient is restless, anxious, distressed, morphine, again, is of the utmost value, for it dulls the sensorium, stimulates and steadies the heart and brings the relief of often much-needed sleep.

THE GENUINE PHYSICIAN.*

By H. C. CLARK, Falmouth.

This meeting closes our society work for 1916. I am surrounded to-day by my friends, or else I have none. At least that is the way I see it. The good times we have had together are brought fresh to our minds to-day, and as we touch elbows in the circle of brotherhood, let us feel again the pleasure of being in each others presence, with a genuine and real warmth of soul which inspires us to sing again the refrain dedicated and sung to us by the daughters of the society, so-called:

"In helpful bond may hand clasp hand
The cords of love grow strong,
And may the lives so divinely planned
Be happy, full and strong."

Now with renewed strength of purpose let us put away the sin that doth so easily beset us and think more of what we can do for each other and less of what we can make in money, relying upon our capability to secure deserved business.

We are mindful of the hardships coming to every physician doing country practice. If he entered the profession in order that he might always have a good easy time, he soon falls from the silvery clouds of dreamland and hits the earth with a bump. We know the road traveled by a country physician. We have traveled it 40 years. You have our profound sympathy. We would not withhold what is coming to you either in sympathy, praise or blame. Compared with other legitimate business men, the physician in education and general qualifications is the equal to any and superior to many found in our land. He has as great responsibility, and is as useful as any citizen. Of course there are exceptions. It is not our purpose to make prominent the exceptions by personal reference. We shall not falter or hesitate to say what we believe to be fair and right concerning the physician of to-day—whether he be half way in or half way out of the profession. He will know whether or not what I say fits him. Any physician who is in the profession for what he can get out of it in dollars and cents has failed to appreciate the high calling and grasp the honor within his reach. He will be often found bartering and conniving in various ways to obtain business which usually comes to the deserving without solicitation in any way. He is a pitiful object in the sight of any respectable physician. He feels guilty, looks guilty and always half hearted, and like counterfeit coin, is slippery and smooth. What a

pity such men ever concealed from the faculty their real self.

Here is the real physician, whose hand is firm in its grasp, who looks you squarely in the eyes. His heart is like that of Jonathan, he is seasoned to hardships, knows what it takes to constitute a real man, is sincere, a good listener, cautious talker, thoughtful, clean of body and mind, is not puffed up "seeketh not his own." This is the man who takes the road when other people are in their beds, soothed to sweet and blissful sleep by a sense of warmth and security from the storms, wrapped in their warm blankets to dream away the hours. The good and faithful doctor faces the bitterness of the winter storm with the pitiless howling of the wind that sends the frozen needles of ice into his weatherbeaten face, his hands numb, his heart aching, his mind filled with conflicting thoughts of home fires and the patient at the other end of the road. He almost staggers under the load of care, and half blinded by the glare of light from the door of the cabin which he has entered, he covers his eyes with his hands until he grows accustomed to the light and gets his bearings. Poverty is plain to be seen, but not noticed by this kind of man, who says "Never mind there now, I'm here to help you." And forgetting everything except the good of his patient, with willing hands and bravery born of desperation, he puts up the only kind of fight you would expect from this sort of physician. Do you think for a moment that this kind of man will be found trying to break into any other physician's field of practice by charging less or making dirty little insinuating and slighting remarks about a brother physician? How do such men generally stand in the community where they live. Are they respected and trusted? They are the hope of the medical societies, and the profession at large, and are holding high the standard wherever they are found. You all know who I mean. We are glad to have lived long enough to know such men. How would the physician we told you about look and feel when stood beside such a man or how would he compare with him. Just about like Tertulus compared with Paul.

Every physician cannot be popular with the public, nor do a large practice, but he can have sufficient love for honesty, truth and fair dealing to stand on his dignity demanding the respect of his friends and associates in the profession. It takes more than a promise, payment of dues and the 50c fee to protect us from prosecution. To be a worthy member of this society, it takes more than unfulfilled promises, hypocrisy and cold deceit or indifference to perpetuate this body and honor the profession which has been generous enough

*Read before the Pendleton County Medical Society.

to give us a place in its ranks. Let us put more heart and soul into it. Indifference will kill anything. It will kill you. It will kill all that is in you of hope, happiness and peace. We plead with you to wake up and see where we are drifting. A more perfunctory attendance on our regular meetings will not help you or the society unless we quit undercharging—often charging for a three mile trip when we have gone eight or ten miles into another physician's territory. Be sure our sins will find us out. We are our brother's keeper and in charge of the honor of the profession. Is it worth defending? Or are we fit to be entrusted with its keeping? Are we only united in name, have we any respect for Medical Ethics, or do we use it when it suits us as a sham or printed prayer doing violence to a brotherhood and dishonoring the calling. In all sincerity, we firmly believe that unless an immediate and radical change is made in our conduct toward each other, some of us will in the bitterness of our soul say "Ichabod," and departing leave the whole thing in the hands of the Phillistines. *We hear so many accusations that if half are as guilty as reported, a special session of the Grand Council should be called. We ought to be ashamed to be so insincere and two-faced, and to practice all sorts of schemes and tricks in order to get a hold on the gullible and credulous, the so-called preparatory treatment to make easy times for a woman and a hundred other plans and tricks that are enough to bring the blush of shame to the last one of us and disgust the public who know us and can see through our veil. We are actuated in saying what we have said in the interest of the medical profession in general, and not because we hold anything personally against any man, or take this means to gratify our spleen. Nor are we sore at a single member. There is nothing too good for you if I had the giving. We, therefore, ask for your harmony and fair dealing between each other. "To thine own self be true and it follows as the night the day, thou canst be false to none."

The average man will give an attorney from three to five thousand dollars, together with a life-time of praise, to keep him out of the penitentiary for from two to ten years, yet at the same time will raise a phosphorescent glow and a kick that can be heard around the world if a doctor charges him fifty or a hundred dollars to keep him out of Hell for a life-time. We are the only people under God's ethereal tent to-day who keep open shop for twenty-four hours a day, for three hundred and sixty-five days each year. We are also the only laborers who keep on working for people who do not pay.—Bulletin Lawrence County Medical Society.

VULVO VAGINITIS.*

By A. L. BECKETT, Butler.

This affection is found in very young infants and in children from 2 to 13 years of age and also in older persons and is usually secondary to vulvitis. It is generally one of two forms, either simple or gonorrheal. In infants it generally begins as a vulvitis which being uncared for rapidly spreads to the vagina or urethra or to both, which makes a bad combination for so young a subject. In many cases the ureter is not affected but there seems to be a tendency for the disease to extend through the entrance of the thymen and involve the vagina and perhaps the cervix uteri.

Examination shows a reddened eroded surface of vulva, hymen and vagina. A copious purulent or muco-purulent discharge escapes from the parts and may form in crusts on labia majora or thighs. It may be thick or thin, or even gelatinous and is very irritating producing an erosion with parts in which it comes in contact which makes it a very painful condition. When simple vulvo vaginitis attains a very severe grade of intensity it is almost impossible to differentiate it from the gonorrheal form as the microscope does not always aid us as we would expect.

As it is usually secondary to vulvitis any of the causes of that condition might be considered a cause for vulvo vaginitis such as masturbation, excessive or brutal coitus, rape, irritation of parts in obese women, blows, fall or kick, also the various irritations as lack of cleanliness in warm weather, pediculi pubes, seat worms, abnormal discharges from uterus, urethra or bladder, or bacteria from decomposed urine, fecal or urinary fistulas and malignancy. Children with a strumous diathesis are also predisposed to the disease.

Gonorrheal vulvo vaginitis: Taylor in his work on venereal diseases says that it must be distinctly understood that vulvo vaginitis is very rarely of venereal origin and that if the suppuration does originate in gonorrheal pus the infection, in most cases, takes place in an indirect manner, through some medium or agent.

In cases of young infants and children it is often impossible to learn any facts as to the source of infection. Infants are often brought to the physician with vulvo vaginitis when they are a few weeks old. They have been infected with pus from vagina of their own mother or their nurses as it is a fact that some mothers and nurses will quiet a child by placing a finger in the vulva, hence you can readily see how a soiled finger might create an infection of the little one.

*Read before the Pendleton County Medical Society.

Or sponges or wash rags used by mothers suffering with a leucorrhœa on themselves and then on the child might produce the same effect.

Among older girls or women direct gonorrheal infection may occur as a result of attempted or complete coitus. The symptoms are about the same as in simple form beginning with a mild localized hyperæmia, later on the parts involved may become eroded and bleeding with a profuse yellowish green discharge coming from vagina, or even cervix uteri. When the cervix is involved the child is apt to complain of belly-ache. If urethra is involved there will be frequent and painful urination. The course of the disease depends on the care and treatment instituted. Under the most favorable conditions the affection is often very obstinate and if neglected and not treated properly may end in an extension to adjacent parts and pass into a chronic catarrhal condition. However, if treated properly the disease may be cured in two or three months.

MENORRHAGIA AND METRORRHAGIA; ETIOLOGY AND PATHOLOGY*

By T. A. PEASE, Kirbyton.

The first named is supposed to convey the idea of excessive bleeding at the regular period for menstruation, and the later bleeding at irregular times without reference to the regular period.

But since my subject is only to deal with etiology and pathology, and since either or both may be due to the same lesion, both I think may as well be taken up at once (together).

Neither menorrhagia nor metrorrhagia is a disease of itself but are symptoms of a great variety of pathological conditions, both local and general. Therefore to give the causes would be to name the condition most likely to produce the symptoms, and to comprehensively give the pathology would be some job.

Threatened or incomplete abortion very frequently causes considerable hemorrhage, indeed, that cause is becoming very frequent it seems to me. And the origin or pathology of this flooding is, in the early stage, the beginning separation of the forming placenta from the uterine wall, having open blood vessels, and that of incomplete abortion is due to retained secundines, preventing a complete muscular contraction.

Another rather frequent cause is uterine polyps, also fibroids of the submucous type. Carcinoma either of the cervix or body of the uterus cause more or less bloody discharge,

the amount depending upon the degree to which the growth has developed. Every case of more or less continuous, slow hemorrhage in women approaching or past middle life should be considered suspicious until a painstaking examination of the uterus has been made and the absence of cancer established, and to be of value to the patient this cause must be discovered very early.

Acute or chronic endometritis, whether infective or due to retrodisplacements, subinvolution, sexual excitement, or other things often causes menorrhagia. This being due to the hypercemia naturally accompanying the inflammation. In elderly women arteriosclerotic conditions of the uterus may produce the symptoms, rarely, I think, deficient musculature by some is considered sufficient to cause excessive menstruation.

Extra-uterine pregnancy is another infrequent cause of bleeding, usually of the menorrhagic type; an early recognition is also valuable in this condition, owing to the maternal risk where the tube is allowed to rupture.

Then there are a number of general or systemic diseases which may be causative, i.e., chlorosis, hemophilia, etc., mitral stenosis, hepatic engorgement, abdominal or pelvic tumors, in fact any of the conditions that produce a general pelvic congestion.

To give the pathology of each of the causative factors or even attempt to do so, would require entirely too much time for me in writing it up, and too much patience on your part if I should, waiting while I read it.

Fatal Tetany in Adult.—Kjølstad reports a case of fatal tonic convulsions in a man of 22. He had had an attack of convulsions about once a year during the last four years, always preceded by getting chilled. The attacks lasted a day or two, beginning with pains in the stomach and cramps in the limbs. The urine was normal but there was profuse diarrhea each time after the convulsions had subsided. In the intervals his health was good and he never had dyspeptic disturbances. The patient lived in a focus of endemic goiter. He succumbed in an unusually severe attack of the tetany, under increasing dyspnea and heart weakness. Necropsy was not permitted. He had worked as usual at roadmaking that January day up to his last attack, but had complained of cold feet. The attack came on after two hours in bed and proved fatal in forty-eight hours.

After prostatectomy: Tympanities is controlled by strychnin and eserine, pituitary extract internally and turpentine stupes; hiccup by atropine; severe vomiting by stomach lavage.—H. H. Morton, Therap. Record.

*Read before the Muldraugh Hill Medical Society.

DIABETES MELLITUS; ETIOLOGY, PATHOLOGY AND SYMPTOMATOLOGY—SYNONYMS, MELIURIA, GLYCOSURIA.*

By W. L. Mosby, Bardwell.

Definition: A perversion of the carbohydrate metabolism, characterized by excessive amount of urine containing glucose, and of a chronic nature.

The pathogenesis of diabetes is not fully known. Some have thought and taught that the pancreas produces the internal secretion necessary to complete carbohydrate metabolism since it has been demonstrated that removal of this organ suffices to produce glycosuria. Pancreatectomy causes glycogen to disappear from the liver and from the muscle as well, yet a small piece of the organ left in situ or transplanted under the skin will not result in permanent glycosuria. Since it has been observed that pathologic changes occur more frequently in the island of Langerhans than in other parts of the organ many have been led to believe that this part of the organ supplied an internal secretion essential to carbohydrate metabolism.

The exclusive pancreatic theory of diabetes does not now prevail as it has been shown that other internal secretions have an important part in carbohydrate metabolism.

Adrenalin injections will produce glycosuria not unlike diabetes. The thyroids, parathyroids, hypophysis, adrenals, liver and pancreas are concerned in the etiology of diabetes.

In other words it has resolved itself into a problem in internal secretion. The exact relationship of this complicated phenomena of internal secretion is not fully understood.

The liver and the muscles are the storehouse of glycogen, a product of carbohydrate metabolism and the pancreas through its peculiar secretion controls its storing, while the supra-renals by its internal secretion, liberates it, in response to the needs of the system, acting as antagonistic in one instance and synergistic in another.

In keeping with this scheme the thyroids possesses an inhibitory function over the pancreas thereby lessening its control of glycogen retention by the liver.

This is the explanation of the occurrence of glycosuria in goiter cases, and the so-called alimentary form of diabetes, produced by ingesting excessive amounts of glucose. The hypophysis inhibits the pancreas and while the thyroid does the same yet the parathyroid holds check over them, their secretion antagonizing each other, their removal producing a glycosuria.

This wonderful co-related interlocking system of organs concerned in the phenomena of carbohydrate metabolism has its control in the sympathetic nervous system and its action is conveyed through this medium.

Influence reaching or originating in the floor of the fourth ventricle are conveyed by the sympathetic to the left adrenal and by the splanchnic to the liver. Division of the splanchnic nerve or removal of the suprarenal will prevent injury or irritation to the floor of the fourth ventricle producing glycosuria.

Based on the above phenomena and before our present day knowledge of the principal of internal secretion was so well understood some clinicians divided diabetes into three forms according to the prevailing symptoms in the individual case, viz.; pancreatic, alimentary and nervous. In the Pancreatic the islands of Langerhans was thought to be the site of the lesion or pathology, since tumors, growths, cysts and disease here will produce glycosuria, and all cases not conforming to the other two forms was also thought to be pancreatic. The alimentary form included all cases characterized by disturbance of the digestive tract with diarrhea and glycosuria which is really due to excessive ingestion of glucose.

Irritation or tumors, growths and degenerative changes about the floor of the fourth ventricle was held as the pathologic site of the nervous type with its syndrome of symptoms.

From our study of the subject we are led to believe that the pathogenesis of diabetes involves a disturbance of one or more of the organs concerned in the complex cycle of internal secretion and control, and we believe that the near future will give us a knowledge that will enable us to differentiate the various clinical types based on the function of the various internal secreting organs involved in the pathology, as an etiologic factor. When this positive knowledge is available, then it will be that medicine or surgery will be able to offer a cure for this hitherto incurable malady. This is a fruitful field for the scientific mind of the investigator and its discovery would be a great boon to suffering humanity.

Symptomatology. An excess of urine, light in color, of high specific gravity ranging from 1025-1060 and of a sweetish odor and taste are the leading characteristics. The quantity of urine may be increased to as much as 5 to 10 liters (10-20 qts) in the 24 hours and is usually distinctly acid in reaction. Thirst is very much increased on account of excessive elimination by the kidneys and so it is the ap-

*Read before the Carlisle County Medical Society.

petite due to disturbed metabolism and nutrition. The breath may be sweetish and digestive disturbance may be present characterized by nausea, vomiting and diarrhea that may replace a previous constipation.

Emaciation associated with great bodily weakness appears as the disease advances. Pruritis is a very common symptom affecting more frequently the genitalia caused by the glucose constituents of the urine. The careful diagnostician will usually experience little difficulty in making out a case of diabetes from the clinical history especially where a urinalysis is possible.

EMPHYEMA IN CHILDHOOD: ITS DIAGNOSIS AND TREATMENT.*

By P. C. LAYNE, Ashland.

Just how frequently this serious complication occurs in the diseases of infancy and childhood I have been unable to learn after diligently searching the pages of the various authors who have written on this subject; but whatever its incidence may be, it occurs with such frequency and is attended by such serious results if not promptly recognized and properly treated that the physician should be always on the lookout for it when treating pneumonia and the acute exanthemata.

As a knowledge of the etiological factors concerned in the production of empyema of childhood will be of great assistance in arriving at the correct diagnosis, I shall briefly recount the most frequent and the most potent causes leading to this condition.

Foremost in the rank of etiological factors stands age, fully nine-tenths of the cases occurring before the fifth year.

Pleuro pneumonia, either lobar or broncho, is the most frequent exciting cause at this age, while after this period the bacillus tuberculosis plays an important role. Next in order of frequency stand the acute exanthemata, scarlet fever, measles, pertussis, small pox, erysipelas, typhoid fever, etc. Pyogenic infection of the peritoneum, the liver, sub-diaphragmatic abscess, and infection of the umbilicus in the newly-born are also not infrequent causes. As local causes may be mentioned fracture of the ribs, and abscess of the thoracic wall breaking into the pleura or invading it through continuity of tissue. We must also make mention of the metastatic infections arising from the hidden foci of infection in the tonsils, about the teeth, and the various sinuses of the face and cranium. The left pleura is involved more often than the right in the ratio of 3 to 2, both sides being affected in 3 per cent of all cases.

The various bacteria concerned in the pro-

duction of empyema have been carefully studied by a number of eminent observers, and can for all practical purposes be divided into three main groups:

- (1) The pneumococcus group.
- (2) The streptococcus group.
- (3) The bacillus tuberculosis group.

The majority of the cases of empyema in children are produced by members of the first group consequent upon an attack of lobar or broncho pneumonia; the streptococci are found most frequently after the acute exanthemata, but may be associated with members of the first group in the so-called metapneumonic cases of empyema; the bacillus tuberculosis plays a more important role than is usually considered, such close observers as Osler, Strumpell, Le Damany, and others crediting it with the production of the majority of all primary pleuritis. The symptoms of empyema in childhood are so often overlooked by the careless observer, that it may not be irrelevant to recall the more important ones in passing. The primary cases present an acute onset with high temperature and general and local symptoms resembling pneumonia. After such a stormy onset the chest may be found full of pus as early as the third or fourth day.

In the metapneumonic cases the symptoms of empyema may follow those of the original disease without intermission; or after the temperature has returned to normal or nearly so it may rise again quite suddenly, but more often gradually; with this accession of the temperature there may be other symptoms pointing to an increase in the thoracic disease.

After scarlet fever or other infectious disease the onset of empyema is often announced by cough, rapid breathing, and the other usual symptoms of pulmonary disease. In rare instances, particularly in older children, empyema may come on so insidiously that the slight fever, dyspnoea, and cachexia, may escape the careless physician's attention unless he make careful daily examinations of the thorax.

Whatever may have been the mode of onset, sooner or later, the presence of pus in the chest brings about unmistakable signs.

The child becomes anemic, pallid, prostrated, and is content to lie quietly in its mother's arms or wherever placed; the respirations are accelerated, 40 to 70 per minute; cough and dyspnoea are present, the latter sometimes well marked but often so slight as to be detected only by close observation; fever of an intermittent type is usually present, but is exceedingly variable, rarely high, in many cases not over 100 F., and may be altogether absent. In the more neglected cases there are anorexia, loss of flesh, even inanition, sometimes

*Read before the Boyd County Medical Society.

diarrhoea, and in long standing cases clubbing of the fingers, albuminuria, and swelling of the feet.

With the presence of any of the above signs and symptoms following pneumonia or the exanthemata the physician should certainly be counted derelict who would fail to make a careful examination of the patient's chest. The diagnosis of empyema is made by careful study of the clinical history, the physical signs, the use of the exploring needle, and at times, the employment of the X-ray.

Usually the clinical history and the symptoms enable us to make a diagnosis between serous and purulent effusions with a great degree of certainty. The physical signs in empyema do not differ essentially from those of serous effusions. If the patient is under three years of age the fluid is almost certain to be purulent; and from the third to the seventh year pus is more often found than serum. When auscultating the chest of a child the examiner should bear clearly in mind, that even with a chest full of pus the vesicular breathing sounds are quite clear and distinct. The child's chest wall is very elastic; and hence from the well known law of physics that only elastic bodies transmit sound, can we satisfactorily explain the above paradox. In all cases the pleural cavity should be explored with a good sized needle attached to a reliable hypodermic or suitable exploring syringe. If the first attempt fail to find pus, another, and another, should be made until we are reasonably certain that no pus is present. In some cases the exploring needle fails to reveal pus and it is in such instances that a good radiogram may be of inestimable value. Strumpell¹ says: "It is, indeed, of practical importance to know that there is a likelihood in empyema of obtaining *no* fluid by means of exploratory puncture, even, when upon incision pus is found. We have had this experience repeatedly. In doubtful and severe cases in which there is a suspicion of empyema, it is, therefore, decidedly advisable, when life is threatened, to make an incision of the pleura."

Another means at our disposal for the elucidation if the character of the pleural exudate is the method of cystodiagnosis. By this procedure the aspirated fluid is spread on cover glasses in the form of smears, stained with one of the Romanowsky stains, and examined with the microscope. The information gathered in this way is often of valuable diagnostic as well as prognostic value. For instance, if the pneumococcus is found alone in the exudate the prognosis may be looked upon as favorable; if on the other hand, the streptococcus is the only organism present the prognosis is considered grave; if the exudate is microscopically sterile and the exudate is made up

of mononuclear leucocytes the presence of tuberculosis may be very strongly suspected.

The mistake of considering empyema as a case of unresolved pneumonia is quite a common one; but delayed resolution is very rare, empyema very common. The differential points are that in pneumonia there is dullness, usually over one lobe, rales and friction sounds are heard, and the heart is not displaced. In empyema there is flatness over the whole lung or over the lower half of the chest in front and behind, with usually the presence of vesicular breathing, and displacement of the heart.

On the right side abscess of the liver and subdiaphragmatic abscess may at times have to be differentiated from empyema. The history of the case with perhaps some focus of inflammation in the peritoneal cavity will point to collections of pus below the diaphragm, but the X-ray and even an exploratory incision may have to be resorted to in order to clear up the diagnosis. The most serious complication in young children with empyema is pericarditis; in older ones, tuberculosis. Among other serious complications may be cited the rupture of the pus into a bronchus with suffocation of the individual or the later development of septic pneumonia which speedily terminates life. Rupture may also take place into the esophagus with the formation of a pleuro-esophageal fistula; or the pus may burrow behind the diaphragm appearing in the loin as a lumbar or psoas abscess; or it may perforate the diaphragm and invade the peritoneal cavity, setting up a fatal peritonitis; or what is considered the most favorable natural termination the rupture takes place through the spongy lung tissue into the bronchus and the pus is gradually coughed up, sometimes with the recovery of the patient. In the so-called cases of empyema necessitatis the pus is discharged through an intercostal space, usually the fifth interspace, in the region of the nipple, and if unrelieved *secundum artem*, may continue to discharge throughout the life of the individual.

"The prognosis of the empyemas of childhood," observes Holt², "depend upon four factors:

"(a) the cause; (b) the age of the patient; (c) the duration of the symptoms, and (d) the treatment."

The pneumococcus infections give the most favorable outlook, while pure streptococcal infections are the most grave. "The mortality under one year of life is fully 50 per cent; in older children seen early, within from four to eight weeks, and receiving proper treatment, recovery is the rule, unless the empyema is double or complications exist."

The treatment of empyema is strictly surg-

ical. Aspiration with the exceptions which will be mentioned later is no longer considered a rational procedure. Simple incision through an intercostal space is a life-saving operation in many cases, but should be reserved for cases *in extremis* in which the more surgical procedure of rib resection can not be done. This latter operation is undoubtedly the method of choice in all but a minority of the cases, and should be followed as a rule.

In young infants and in the class of cases which from neglect of treatment the child has become very much debilitated Campbell and Kerr³ recommend a modification of the Murphy treatment for empyema. They direct that the treatment be carried out as follows: An aspirator needle of suitable size is inserted about two fingers' breadth below the level of the fluid and about one or two ounces of the fluid withdrawn; without withdrawing the needle one ounce of 2 per cent. formalin in glycerin is thrown into the chest. The aspirations are repeated daily going down one intercostal space as the pus recedes until no more pus is found; the formalin-glycerin injections are repeated every third day." It is said by the authors that this method of treatment has given excellent results in small children.

They warn against the withdrawal of a large quantity of fluid at one time, as it is followed by rapid exudation and an enormous loss of serum into the empty cavity, which is a serious drain on the vital forces of the child. Brewer⁴ of New York, reporting his experience with this method of treatment, says, "that in his hands it has not been very successful, some of the cases requiring drainage afterwards."

He quotes F. T. Billings as reporting seven cases with three deaths, one due to causes outside of the treatment⁵.

The choice of an anesthetic in operative cases of empyema is one of the most vital questions which the surgeon has to decide, and he will be called upon to exercise his maturest judgment in its selection. Whether he will employ a local or general anesthetic must be determined for each particular case as the indications can be expressed only in a general way. The majority of surgeons recommend local anesthesia, as a rule, for children, and Kocher⁶ advocates its employment for adults as well. "The danger attendant upon the employment of a general anesthesia are so great that it is better not to employ it at all," is the warning of Holt⁷; and he further adds, chloroform is more to be feared than ether." Cheyne and Burghard⁸, and the classic work of Mr. Jacobson⁹ advise the employment of chloroform. Sir Frederick Hewett¹⁰, perhaps, the highest authority on anesthetics in the world states: "The condition of the patient must be

the guide. From the point of view of the surgeon chloroform is preferable to ether; but there are many cases in which the latter anesthetic should be used in preference to chloroform.

"Whenever possible ether or an ether mixture should be chosen; for although it may cause some increased difficulty of breathing the circulation will be well maintained. It should of course, be given by the semi-open method."

So far as I could determine Keen's Surgery¹¹ makes no statement of the question at all; while Bryant and Buck¹² advise that the anesthesia be commenced with chloroform and continued with light ether anesthesia. With this mass of divided opinion before one, it becomes at once apparent that the proper selection of an anesthesia for a child with empyema becomes largely a matter of individual experience and judgment of the operator in the particular case under consideration.

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An Anomaly of the First Rib.—A. Clerc, R. Didier, and J. Bobrie (Bulletin de l'Academie de medecine, March 27, 1917) report the case of a man of thirty-one years exhibiting a swelling below the left clavicle, with slight functional inefficiency of the left arm dating back to childhood, and neuralgic pains implying pressure on the brachial plexus. A cervical rib was suspected, but X-ray examination showed a long, thin rod of bone passing obliquely outward from the spinal column and terminating behind the middle of the clavicle. This bone, though straight, was attached to the first dorsal vertebra and, as the operation showed, was fixed at its anterior pointed end to the second rib by fibrous tissue and small mass of muscle tissue. The case is held to show that it is frequently impossible for the practitioner to distinguish a cervical rib from a first rib anomaly, the pressure disturbance being the same. Even X-ray examination is not always sufficient. Operative treatment is, however, indicated in either case.

SOME CONDITIONS OF THE LIVER, REQUIRING SURGICAL INTERVENTION.*

By P. H. STEWART, Paducah.

Lesions of the liver calling for surgical interference to be dealt with in this paper may be classified as traumatic, infectious, tumor formations and those of the bile passages.

Traumatic injuries are usually contusions, perforations or ruptures. If you are reasonably certain the capsule or liver substance is not lacerated, rest, perfect quiet and cold applications will be followed by recovery.

Rupture, stab incisions or gunshot injury to the liver usually call for surgical intervention, in order to arrest an otherwise fatal hemorrhage. The symptoms are, history of injury, pain, severe shock, increased liver dullness, abdominal rigidity, nausea and vomiting, and internal hemorrhage, and later jaundice, abdominal distension, and peritonitis. Whenever in doubt as to injury to the liver, an exploratory incision offers the greatest measure of safety.

On account of the friability of the liver tissue arrest of hemorrhage is frequently a most difficult and perplexing emergency to combat. When the abdomen is opened the first procedure should be directed toward control of hemorrhage. In event of ruptured liver the ruptured surfaces should be approximated and held in position by mattress sutures. Sometimes the actual cautery applied to bleeding surfaces is all sufficient, and if the rupture is extensive it may be necessary to pack firmly with gauze, and gradually remove after six to ten days. If the hemorrhage is from a perforation, it may be necessary to pack with several pieces of gauze packing, through and through, and remove it piece at a time for several days.

After arrest of hemorrhage, clean abdominal cavity of all clots and blood, and close with drain in all cases.

Abscess of the liver may be either multiple or single, and due to staphylococci, streptococci, colon bacilli, typhoid bacilli, or ameba coli.

If multiple in number, but little relief from surgery can be offered, and they usually go on to a fatal termination. Fortunately most abscesses of the liver are single in character but unfortunately, from a diagnostic standpoint, one of the most difficult pathological conditions with which we have to contend. In fact, a diagnosis cannot be made except by aspiration or operation.

Some authorities condemn the routine efforts of diagnosis by aspiration, on account of the possibility of peritonitis following a leak

of pus through the puncture made with the aspirating needle, but I am of the opinion that it is reasonably safe, and preferable to a routine practice of exploratory, abdominal incision, especially in face of the fact that in a large majority of cases adhesion of the liver capsule to the diaphragm and abdominal wall have taken place, rendering contamination of the peritoneal cavity an impossibility. The tenure of this position is augmented by the unfortunate fact that a positive diagnosis by clinical signs and symptoms is so far beyond the realm of medical ability.

I do believe however, that when we aspirate a suspected liver we should be prepared to immediately open the abdomen and thoroughly evacuate the abscess cavity. This is best done, by leaving the aspirating needle in situ, and cutting down onto the liver at the point of entrance of the needle. When the liver surface is reached, if adhesions are not present, great care should be exercised in thoroughly walling off the free peritoneal cavity with gauze sponges, and after the cavity has been greatly emptied through the canula, the opening may be sufficiently enlarged, and the cavity completely cleansed out, followed by rubber tube, or gauze drain.

Tumors of the liver are largely secondary to some pathological condition in some other region of the human economy, and are generally speaking, benign and malignant. "The benign tumors found in the liver are endothelioma, fibroma, myoma, angioma and adenoma," with rarely some other forms, and unless large and producing sufficient cause for interference had best be let alone. If surgical intervention is indicated, it can best be accomplished by enucleation, or if septic in character, by drainage.

Malignancy of the liver is a primary effect-ion is rare; secondary sarcoma and carcinoma comprise 95 per cent. of liver tumors, and whether primary or secondary, but little hope can be offered in effecting a cure, unless very early discovered in operating for some other condition. It is doubtful if efforts for their removal are at all justifiable, when secondary to malignancy in other parts of the body. In the primary nodular form enucleation may sometimes be effectively accomplished by excision either by crushing with forceps, knife or actual cautery. In justice to one's own personal reputation and in the name of good surgery, interference had best be withheld except in extraordinary and rare cases.

On account of the frequency and disturbance, pathological conditions of the gall bladder and bile tract are the ones which appeal most forcibly to both the general practitioner and the surgeon. On account of position, association and lymphatic supply, the bile passages are more often the seat of disease than

*Read before the McCracken County Medical Society.

any other organ of the abdominal cavity unless possibly, the poor little defenseless appendix. Involvement is most usually inflammatory or gall stones, or both, yet malignancy of the gall bladder occurs in about 5 per cent. of the cases, and in 75 per cent. of the cases of malignancy of the bile tract the gall bladder is the part primarily involved, and with from 85 to 95 per cent. of malignancy is associated gall stones.

Infections of the gall bladder may be one of many or a combination, but the most usual encountered are from colon bacilli, staphylococci, streptococci, pneumococci, or typhoid bacilli; and gain entrance through the blood stream, or more often by direct migration from the duodenum. Inflammation of the bile passages from these infections may be located in either the common, hepatic, or cystic duct, or in the gall bladder, and may be acute or chronic, mild or severe in either the acute or chronic type. If acute the condition usually yields readily to medicinal remedies, or at least there is a temporary arrest of symptoms. In the chronic forms the symptoms usually most prominent are those of infection, pain and obstruction, and it is for these that we are appealed to, and they may have their origin in either the ducts or gall bladder, and may be either an inflammation or gall stones or both. Which ever it be, and wherever it be, it is most generally a surgical condition. Do not understand that I would advocate surgery in the first attack of gall bladder pain, or even pain with jaundice and infection, unless these symptoms were severe and lasting, but as a rule the history is one of repetition with variations extending over an indefinite period, long before it falls into the hands of the surgeon.

Chronic inflammation of the gall bladder is usually, but not always accompanied by gall stones, and presents a wide and varied syndrome, the infection extending into the cystic and common ducts, and not infrequently accompanied by a suppurative condition. The symptoms may be mild or severe, but usually are. pain, tenderness over gall bladder area, radiating to shoulder or back, reflex digestive disturbance, sometimes jaundice, rigor, temperature and septic sweats. There is loss of appetite, emaciation, and sometimes a tumor may be palpable. On account of the formation of stones if they be present, the X-ray is of little or no service in making a diagnosis.

Unfortunately for the individual afflicted, these gall bladder and bile tract conditions do not yield to medicinal treatment, and also unfortunately surgery does not always produce uniformly brilliant results. The operations of choice would be either cholecystostomy or cholecystectomy. On account of supposed increased risk in cholecystectomy, cholecystos-

tomy has in the past been the operation most usually done, but to-day in the large surgical clinics the pendulum seems to have swung to the other side, and the end results have proven that in competent hands, with the large majority of infected gall bladders, with or without stones, cholecystectomy yields as low mortality and much higher percent. of cures than can be secured by cholecystostomy. Personally, I know I have relieved my conscience in the past in too many instances in doing a simple gall bladder drainage, and have been humiliated and chagrined to have the patient return, complaining of the same symptoms existing previous to the operation. I do not believe as yet we fully know just which gall bladder to remove and which one to simply drain.

Broadly speaking cholecystectomy is indicated in very thick, acutely inflamed or gangrenous gall bladders where you have impaction in the cystic duct; in chronic inflammation with marked thickening of the gall bladder walls; in gall bladders very much distended from impaction of stones in cystic duct; wherever suspicion of malignancy exists; in the mulberry gall bladder, and where there exists adhesions to adjacent organs, and more especially to the stomach, for these are most sure to cause repeated and persistent distressing and annoying symptoms.

Cholecystostomy may suffice in cases of acute cholecystitis, with or without stones in which cholecystectomy might prove hazardous and dangerous to the patient; in pancreatitis with jaundice; in cases where the common duct is occluded from within or without, and the cystic duct open, and in cases of gall stones accidentally discovered when the abdomen has been opened for some other pathology, and where the stones have given rise to absolutely no symptomatology.

The Follicular Type of Eczema Seborrhoeicum.

--William B. Trimble (Journal of Cutaneous Diseases, January, 1917) describes a new clinical type of this affection. It occurs in both localized and diffuse form. The localized form occurs commonly on the chest and upper back. The lesions occur in small patches, brownish red in color, and made up of a great many inflammatory follicles close together. The follicles are slightly pink and enlarged with dilated mouths; in each opening and around it, is seen a piling up of small greasy scales, making a tiny cave. Over the whole area the evidence of seborrhea is apparent. In a case of long standing the skin is rough to the touch, and in a mild sense takes on nutmeg grater, appearance. The author has used aene vaccine in the treatment of a few of these patients with apparent benefit.

A FEW PRACTICAL POINTS ON THE
DIAGNOSIS OF RENAL LESIONS.*

By E. W. JACKSON, Paducah.

It seems to be an almost invariable custom for the writer of a paper to preface his remarks by commenting upon the recent and wonderful advances that have been made upon the subject with which he has to deal, but we believe that it may well be said that, there is not an organ nor a system of organs in the realm of medicine that has afforded a more fertile field or been a recipient of more scientific advancement than have those of the genito-urinary system and in this progress the kidney has kept pace with its associated organs. It has been but a comparatively few years since these organs were considered as being among the most obscure and uncertain from a pathological and diagnostic viewpoint of any organs in the body. This was of course, due to their anatomical location together with the fact that they empty their products through the same channels as other organs and present so many symptoms that are not only common to more than one disease of the kidney itself but to disease of other organs as well. But with the introduction and perfection of the modern urological instruments and the procedures made possible with their aid, combined with the resulting awakening and increased interest manifested in this line of work, they have reached a place where their diseases may be as easily and accurately diagnosed as any of the internal organs.

Diseases of the kidney are rarely, if ever, accompanied by a symptom syndrome from which we are able to make a positive diagnosis, owing to the fact that there are but few symptoms found in kidney diseases that are not also suggestive of diseases of other genito-urinary organs. But by taking each symptom as it presents itself and carefully eliminating every condition one by one which could cause such a symptom and finally tracing it directly to its source and then correctly interpreting our findings we can be reasonably certain of a diagnosis in most cases.

The symptoms and signs which would direct our attention to the kidney as a possible source of trouble are tumor in or near the renal region, pain in any part of the genito-urinary tract, frequent urination, passage of blood, pus and casts in the urine, albuminuria, polyuria, anuria, systemic evidences of infection, malignancy and inefficient renal elimination. And in order that these conditions can be traced directly to the kidney and at the same time eliminate disease of other organs as their source, it frequently be-

comes necessary to employ such measures as cystoscopy, ureteral catheterization, radiography, bacteriological examination, animal inoculation and renal functional test which in some cases should be checked by a quantitative estimation of the nonprotein nitrogen and urea in the blood.

Tumor enlargement of the kidney may be due to obstruction of the ureter from a kink, inflammatory products, or it may be due to a true kidney tumor. A fluctuating tumor coming on with more or less pain and relieved by the passage of large quantities of urine or by distension at the ureteral orifice as shown by cystoscopic examination when the obstruction is near the bladder and the passage of a large amount of urine in a steady stream when a ureteral catheter is passed by the obstructed part with disappearance of the tumor would indicate a hydronephrosis and this could be confirmed by injecting the dilated pelvis and ureter with colloidal silver or thorium solution and making a radiograph which would show the size of the cavity. A painful and tender tumor accompanied by symptoms of sepsis or later relieved by the discharge of a large quantity of pus would point to a pyonephrosis but in this case perinephritic abscess would have to be excluded, which can frequently be accomplished by a urinalysis and renal efficiency test, but it may require a puncture or incision. Tuberculosis of the kidney often causes enlargement but this must be diagnosed by such evidence as frequent and painful urination, passage of blood, pus and albumin, systemic symptoms of tuberculosis and finally by finding the bacilli in the urine or by guinea pig inoculation. True kidney tumors can be diagnosed by their constant or increasing size, hematuria, deficient renal elimination, general symptoms of malignancy when malignant, occasionally by the passage of tumor fragments and by exclusion.

Pain and Tenderness. Pain and tenderness from kidney disease may be due to tumor, infection or stone, it may be steady or intermittent and manifested at any part of the genito-urinary tract, however, when mild it is usually noticed more in the renal region and when severe it is likely to be referred to other regions and conversely pain due to disease of other genito-urinary organs may be referred to the kidney, it is therefore, impossible to make a specific diagnosis from the pain itself, and it is necessary to make a thorough urological examination before we can say that pain is due to any certain condition.

Frequent Urination. Frequent urination in kidney disease may be a reflex symptom or result from secondary involvement of other organs. When traced to the kidney it usually means tumor, stone or infection, either tubercular or pyogenic. The frequent urina-

*Read before the McCracken County Medical Society.

tion of tuberculosis usually differs in one respect from that due to other diseases, in that, there is a distinct pain of intolerance and when the urinary desire strikes the patient the bladder will be emptied immediately.

Pyuria. Pyuria merely means that pus is coming from somewhere in the genito-urinary tract; there are a few signs, however, which would indicate that it was coming from the kidney, for example, albuminuria out of proportion to the amount of pus, would point to the kidney, pus in the urine after an amount sufficient to wash out the urethra had been passed, would point to either the kidney or bladder and when strongly acid would suggest the kidney, but in the end the positive test is the ureteral catheterization and at the time this is done the ureteral orifice is usually congested and frequently found standing open, and, when the infection is tubercular, it shows a characteristic appearance which, in itself, will usually suggest the diagnosis. After the source of pus is found to be in the kidney all of the symptoms should be taken into consideration and then if in doubt stained smears and guinea pig inoculation should be made. If it is pyogenic the presence or absence of stone as a factor can be told by the X-ray, and pyonephrosis and pyelitis differentiated by the severity of the symptoms and renal efficiency test.

It is impossible to determine that a small amount of blood in the urine comes from the kidney unless blood casts are found, and then we don't know which one it comes from, a large amount of dark blood thoroughly mixed with the urine and failing to readily separate from it on standing, would suggest the kidney as the source, but here, too, cystoscopy and ureteral catheterization constitute the only definite means of locating its origin. Blood coming from the kidney following an injury and accompanied by evidence of injury to the renal region usually means a ruptured kidney. Blood following exercise and passing away with rest, suggests stone, while that occurring independent of exercise usually results from tumor, severe nephritis, tuberculosis or pyogenic infection. There are a number of other conditions which may cause renal hematuria such as irritation from drugs, erythraemia in urine, infectious diseases, hemophilia, purpura, pernicious malaria and nervous diseases but by a careful systemic and urological examination they can be determined. There is one condition in which hematuria is the only symptom and that is renal varix, frequently termed essential or symptomless hematuria, and here the diagnosis can only be made by exclusion; this condition is rare and many cases of hematuria that were formerly called essential are now found to have some other definite cause, this is, of

course, due to our increased efficiency in urological diagnosis.

Albuminuria. Albumin and casts point to the kidney, albumin with pus and the albumin out of proportion to the pus is suggestive of kidney origin while an alkaline albuminuria with a large amount of pus is suggestive of bladder origin but the positive test is the ureteral catheter. Renal albuminuria especially when mild is not always indicative of kidney disease, as it sometimes occurs following the injection of large amounts of albumin, chilling of the body, excessive physical exertion and anaesthetics or it may accompany infectious diseases, focal infection in distant parts of the body or irritating drugs which cause mild irritation without anatomical change, menstruation, low or high arterial tension, or it may occur in the form of an orthostatic albuminuria. These causes may be eliminated by making a careful physical examination and repeated tests for albumin during rest and following exercise, paying attention to its relation to diet, by the absence of pus and in most cases by the absence of casts. However, slight albuminuria may be only the beginning symptom of renal tuberculosis. Albumin with pus in a highly acid urine is suggestive of renal tuberculosis but albumin is a symptom of so many kidney disturbances such as infections, nephritis, amyloid degeneration and passive congestion that it behooves us, in every case, to make a complete examination in order to find the cause.

Casts. Casts in the urine are from the kidney. Blood casts signify a renal hematuria, pus casts a pyuria, hyaline and granular casts are often the result of renal infections and nearly always accompany nephritis and it may be said here that according to recent investigations, nephritis is due to infection from some distant focus. Renal congestion and amyloid degeneration are frequent causes of casts, the former can be differentiated from other causes by a thorough examination of the circulatory system and the phenolsulphonephthalein test which frequently shows a normal output of the drug eliminated and the latter by making the amyloid test.

Polyuria and Anuria. Polyuria occurs in Bright's disease, diabetes mellitus and insipidus, and in nervous disorders, or it may result from change in temperature, ingestion of a large amount of water, or to the use of agents which have a diuretic action. Anuria may be due to acute nephritis, renal infections, nervous and circulatory disturbances or it may be reflex in origin.

Systemic Effects of Renal Diseases. In renal infections the degree of systemic evidence depends upon the virulence of the in-

fection and degree of retention. There may be a mild infection with rather severe constitutional symptoms due to poor drainage with consequent absorption of toxic material and on the other hand the infection may be severe with good drainage and comparatively mild systemic reaction. The symptoms are the same as sepsis caused by absorption from any other part of the body. The systemic evidences of malignant kidney tumors are also the same as those due to malignant tumors in any other part of the body.

Functional Efficiency. The functional efficiency is a very important element in the diagnosis of kidney disease. It is true that the capacity for work is not always in accordance with the anatomical variations, this is due in one way to the fact that we are normally over-supplied with functioning kidney tissue and when one part is diseased the remainder is often able to take up the work of the diseased part and on the other hand a slight anatomical derangement, through its nerve supply, may severely interfere with the capacity for work. From this it may be seen that we may have a kidney practically out of commission and yet the total output of urine showing a normal efficiency due to compensation on the part of the other organ or we may have a slight renal lesion with all of the symptoms that go with renal inefficiency and the urine showing practically no functional capacity, but in the main it is a very valuable guide in kidney diseases indicating the damage done from a physiological point of view and often being the first proof of anatomical change, especially is this true when used as a comparative test in unilateral kidney disease. Where both kidneys are at fault we have an index to the amount of work they are able to do and it becomes a very important factor in both diagnosis and prognosis. Where the disease is unilateral a diminished efficiency in one and a normal or increased efficiency in the other clearly shows that the kidney is diseased. There have been a number of means devised to test this efficiency such as estimation of the amount, color and specific gravity of the urine and amount of urea eliminated, but possibly the best way we have of estimating it is by the injection of a foreign substance and noting its elimination through the kidneys and the one which will probably give the best results in the majority of cases is the phenolsulphonaphthalein test which was offered to the profession by Rowntree and Gerahty in 1910. This test consists in giving the patient a good drink of water about one-half hour before the test is to be applied to get the kidney acting well, then injecting 6 mg. of the phenolsulphonaphthalein which is put up for the purpose in one c.c. of fluid, into the lumbar muscles and at the end

of ten minutes, at which time it should be appearing in the urine, have the bladder completely emptied and at the end of one hour collect the urine from the bladder and again at the end of the second hour. Then take each specimen separately and dilute with water to 250 c.c. then add 10 c.c. of a 25 per cent solution sodium hydrate to bring out the red color, then add water up to the 1000 c.c., and by comparing these solutions with a colorimeter made for the purpose, the amount eliminated can be learned. Normally a patient will eliminate approximately 50 per cent. during the first hour and 30 per cent. during the second. If preferred, the solution can be given intravenously and the bladder emptied at the end of three minutes then at definite intervals and the estimation made, in this way approximately 40 per cent should be eliminated during the first 15 minutes and 20 per cent. in the second fifteen and 15-20 per cent. during the next thirty minutes. If it is necessary to test the efficiency of each kidney separately the ureteral catheters should be inserted then the drug administered and the urine allowed to drop into a solution of sodium hydrate in order that the time required for the first appearance of the phenolsulphonaphthalein may be known, the catheter should then be left in the ureter for fifteen, thirty, forty-five or sixty minutes as the case permits and then the estimation of the drug elimination made. The time required for appearance in the urine and the percentage given to be eliminated in the definite length of time as given above are a fair average, yet they are subject to some variations and a slight diminution should not be given too much credence unless confirmed by further tests but a material diminution especially when confirmed by later tests should be considered as valuable evidence. When the kidneys are tested separately and show any great difference in their functional capacity it should always be given serious consideration.

From the foregoing points which we have attempted to make clear, it is evident that no symptom should be taken as diagnostic of any particular renal lesion, but in order that its cause may be found we must attack the case from every angle making a thorough physical and urological examination, taking every symptom and tracing it to its origin, making a complete urinalysis, employing such procedures as cystoscopy, ureteral catheterization, radiography and animal inoculation when indicated and then by taking all of our findings, correlating them and drawing our conclusion from the sum total of knowledge gained in this way, we will be able to make a specific diagnosis in nearly all cases.

TUBERCULOSIS OF THE BONES AND JOINTS WITH TREATMENT, INCLUDING SPECIAL REFERENCE TO THE USE OF TUBERCULIN.*

By VERNON BLYTHE, Paducah.

In discussion of this subject, time will not permit a detailed review of the pathology and treatment of all the bones and joints in the body prone to tubercular infection, but a brief general survey of the theme will be given.

The Etiology or Causes: If the tubercle bacilli does not enter the body, tubercular disease of the bones cannot occur. The tubercle bacilli are found in the synovial membranes and in the bones at the seat of disease. There can be a localized tuberculosis of the bone without the individual having a general affection.

Among predisposing causes trauma may be considered among the first in importance, some of the statistics give 35.8 per cent. of the diseases of the bones and joints with a definite history of injury occurring one or two months before the onset of the tubercular symptoms. Yet the history of injury must not be taken too seriously in all cases because it may blind us to the true situation.

Slight injuries have been considered more likely to cause tuberculous arthritis than severe ones for the reason that the parts are kept at rest in severe conditions until repair has taken place.

The existence of tuberculosis in other parts of the body predispose to arthritis. Tubercular arthritis in patients over five years of age occurring in the knee and hip joints is noticed to appear in 60 per cent of the cases on the right side, while in patients under five years there is an equal ratio on either side. Males are more prone to tuberculous arthritis than females. Young children in the first decade are apparently more frequently affected than any other age, with the children and adolescents of the next decade running a close second.

The disease is not inherited, but a predisposition may exist through lack of vitality inherited from tubercular parents, bad hygiene and poor food supply are strong predisposing factors. The latter has recently been brought out strongly in the reports coming from the conquered parts of Northern France and Belgium where it is said there has been a great increase in the tubercular infection of children in the past year. The region of the body most affected in bone and joint tuberculosis is in order, the spine, hip, knee and ankle joints.

Most joint tuberculosis cases are well advanced before the diagnosis is made, many having a duration extending over one to two years.

Pathology: The tubercle or node which appear in bones and joints indicating the beginning of tuberculosis make their first foci in the medullary portion of the spongiosa and progress as an osteomyelitis, their favorite site being the articular surfaces of the long bones and the vertebra. These tubercle then coalesce, grow gradually larger, eventually cascade filling the medullary spaces of the spongiosa, causing swelling of the bones, followed by purulent periostitis and abscess with the resulting osteitis and osseous trabeculae, the bone tissue is thus inclosed by caseous material and then dies.

In joint tuberculosis the synovial membranes are first affected. The nutrition of the whole limb around the infected area is profoundly disturbed. It is at times difficult to decide which was the primary seat of trouble, when there coexist a tuberculous condition of the bones and the joints. Dr. John B. Murphy claimed that all joint tuberculosis began out of the joint and later broke into the joint.

Symptoms: Tuberculous disease of bone are often difficult to recognize, its progress is slow, there may be spontaneous pain and again pain may be elicited by firm pressure. Enlargement of the bone and swelling of the soft parts can be observed in the extremities of the long bones.

Loss of function and atrophy of the muscles due to non-use with disturbance in the nutrition go with these conditions sooner or later.

As caseation advances and the part becomes oedematous, there may come fluctuation over the diseased area. If there is rupture or incision, the fluid appearing is of a light yellowish character, with curdy masses and at times small gritty, fine particles of bone.

Fever is slight and often absent, if it is exaggerated it is caused by a complication of the pyogenic organism. The skin over the tubercular area in arthritis is usually thickened and bleached white. The pain in the synovial tuberculosis is slight, the joint may feel hot to the touch. The X-ray is an important adjunct to a careful clinical examination but the skiagraph may be deceptive.

There is deformity in all cases to a more or less degree, depending upon the joints involved, the extent of softening and involvement of the ligaments. There is a tendency to assume certain attitudes or postures to relieve pain and muscular spasms from the reflex irritation.

Muscular spasm is one of the early and most important symptoms of tuberculous joints, producing some rigidity of joints, this is an automatic contraction of the muscles which

*Read before the McCracken County Medical Society.

may increase markedly as the disease progresses. When sinuses form the patients become exposed to general infection which often endangers his life.

Treatment: This may be considered under two heads; First, constitutional, and second, local measures.

Constitutional methods: Proper hygienic surroundings must be given the patient, spontaneous cures often occur and favorable conditions should be afforded for the best of results. Open air treatment is here just as necessary as in the treatment for the pulmonary form. If it is impracticable in the true sense of the word have the patient's room ventilated with a maximum amount of sunshine and fresh air.

Good nourishing food, easily digested, rich in fats and soda is very essential.

Cod-liver oil is thought to be of more value in tuberculous arthritis than in the pulmonary form. Fowler's solution is one of the best general tonics we have. Syrup of the iodide of iron has been recommended by Dr. Murphy in his clinics. Graduated regulated exercise when possible must not be neglected. Tuberculin treatment will be taken up more in detail further on.

Local Measures: Rest of diseased tuberculous joints is one of the most essential forms of treatment, accompanied with proper splinting for special joints. In the acute stages where there is fever it is best to confine the patient to bed, especially in hip joint infections. When the disease becomes quiescent the patient can be permitted to get about followed with well regulated exercise. Any faulty position must be corrected. Many different materials for splinting have been used, plaster of Paris is possibly the most useful. Rest permits a subsidence of the inflammation, while unrest will cause an exaggeration of the inflammatory condition and more destruction of the diseased tissue.

Traction: This is a means of securing better rest by relieving the tonic contraction and muscular spasm of the inflamed joints. Large weights are not necessary but in the lower extremities constant gradual traction by smaller weight will soon relax the most powerful muscular contraction and give much relief to the patient at the same time correct the faulty position.

Counter Irritation: This may relieve pain by dilating the superficial blood vessels and thus relieve the already dilated vessels of the deeper diseased tissue. Iodoform emulsion has been injected into the tuberculous joints but it has been of doubtful value.

Operative Means: Occasionally this becomes necessary, especially where tuberculous abscess and sinuses exist, in rare cases it may become necessary to amputate. Sometimes it

becomes necessary to open the infected joint and take out the diseased tissue and bone.

Local Hyperemia, or, Bier's Treatment: This therapeutic measure has been used with much success in a certain proportion of tuberculous joint cases. Bandaging of the limb considerably above the diseased joint with an elastic rubber bandage, is the method advised, this is to be done firmly, but not so as to produce pain but to cause stasis hyperemia and to remain an hour daily.

The joint is to be kept at rest during the treatment, an interval of eight days between the application is considered advisable, occasionally. To get results the duration of treatment is to be considered and is to continue until pain and swelling have disappeared. This treatment is not advisable if there are very large abscesses or deformity.

The benefits derived from this treatment is claimed to come from increase of leucocytosis and the bactericidal activity. The absorptive action is produced by the hyperemia and the nutritive effect and consequent regenerative action on the tissue.

The Tuberculin Treatment: The practical application of tuberculin in tuberculous bones or joints disease is to increase the opsonin index thus augmenting the opsonins in the blood serum and thus producing a greater bactericidal quality of the blood. The first effects is to produce a negative phase or antibacterial power of the blood and then a positive phase or increased antibacterial power of the blood.

Caution must be used if a second inoculation is used while the negative phase lasts, if not great harm may result.

In the treatment of tuberculous joints or localized affections we must keep in mind that the opsonic power of the blood is uniformly lower here than in normal blood.

The cultivation of the tubercle bacilli have a more fertile field for growth in joints than those obtained in circulating blood.

The dose must be small for fear of producing a negative phase of prolonged character, 0.001 mg. is the dose advised by careful observers to begin with. The dose is to be repeated when the effects of the first inoculation is passing off, the purpose is to maintain the opsonin power at the higher level.

Test dose of tuberculin is given as five drops of the dilution, No. 2. Lueius and Brunning, Old Tuberculin, by Dr. Murphy.

Dr. J. B. Murphy Clinic: We are doing no primary excision of joints or bones in children at all. The tendency in every tissue in repairing tuberculosis is by itself limitation of the disease by encapsulation of the foci and healing. Every kind of stimuli is needed. We put these patients on tuberculin; and

then use the Roentgen ray. Tuberculin is the finest accessory in treatment.

Dr. Murphy, however, advocates excision of the joints and curettment in adults, in selected cases, tuberculosis is more readily curable in children.

After the reaction of the operation is over, say fifteen days, tuberculin treatment is begun and continued for one year.

Beginning with five drops of Dilution No. 3, injected in arm every five or seven days, the purpose is not to get a reaction of 99.6 degree. The dose is to be increased by two drops until twenty drops are used. The use of tuberculin is very dangerous if too large doses are given. Reactions ranging over 100 degrees are injurious. There is no average dose, the individual reaction can be the only safe criterion as your guide.

Tuberculin is a powerful poison and must always be used with great caution and care.

Prognosis: It is safe to say that tuberculous diseases have been eradicated and that cures are effected both in lung, bone and joint tuberculosis. However, encapsulation of tuberculous deposit may occur and remain quiescent for indefinite length of time. We must not lose sight of the fact that in individuals who have had tuberculous bones or joints there is a predisposition to subsequent attacks and all care and caution must be exercised by them to protect themselves against further trouble. The prognosis depends upon the faithful and efficient cooperation of the patient and physician in pursuing and carrying out the most intelligent form of treatment.

Succus Cineraria Maritima.—In agreement with the report of the Council on Pharmacy and Chemistry holding the claims made for Succus Cineraria Maritima (Walker) unfounded, the federal government charged that the claim that by dropping this preparation into the eye cataract may be cured was false and fraudulent. In February, 1916, the Walker Pharmacal Company pleaded guilty. Since the government's prosecution, brought under the Food and Drugs Act, affects only the claims made on the trade-package of a preparation, the admittedly false claims were still made in circular letters sent to physicians as late as October, 1916.—*Jour. A. M. A.*, March 17, 1917, p. 864.

In ethylhydrocuprein Morgenroth says he has found an agent poisonous to the pneumococcus and not poisonous to the body tissues, or to any other microorganisms. It bids fair to dominate the treatment of pneumococcal corneal ulcer.—*W. H. Peck, Ill. Med. Jour.*

THE GENERAL PRACTITIONER, HIS PATIENTS AND THE SPECIALIST.*

By W. J. SHACKLETTE, Glendale.

In the days of our grandfathers the family doctor represented all that was known of medicine, and as a rule, all of surgery.

Though his knowledge of medicine was crude and limited compared with that of to-day, he stood pre-eminent in his profession and occupied a more exalted position in the estimation of his people than does the general practitioner of to-day. He was looked upon as possessing great wisdom and much learning in the knowledge of his profession and skilled in the practice of his art. And added to this distinction, his advice in matters of law, politics and religion was much sought after and seriously pondered. He was a man truly honored and revered in his own little community.

While the physician of to-day is vastly more learned in his profession and in some ways a better man, others have come into their own and share distinction and honor with him.

In the last half century the wonderful growth and development in the knowledge and application of the art of healing has so broadened the field, that long since it has grown beyond the grasp and practice of one man. This has brought about a necessity for a division of work. till now the term doctor, besides the general practitioner, embraces a number of specialists. And while the practice of the healing art is divided among a score of specialists the field of the general practitioner is broader than before. His achievements are unexcelled and to him the specialist is indebted for the foundation and to a great extent, the existence of his practice.

While the scope of the general practitioner formerly embraced all that was known of special work, the knowledge and skill of the specialist of to-day has developed far beyond the limitations of the practitioner of medicine.

Heretofore the student of medicine has been required to cover the whole field, including specialties, and after leaving school to drift, if he chose, into special work. But the accumulation of knowledge and increased skill in practice is making such rapid progress that the time is near when the student will mainly be directed and trained in the special branch he intends to practice. Each specialty will be a separate course as dentistry is now. The students in the separate courses will be expected to acquire only such knowledge, outside of their own branch, as relates to their special practice.

The day of high efficiency and great precision is here and in order to attain this there

*Read before the Muldraugh Hill Medical Society.

must be a concentration of thought and energy. With the rapid progress and development along all lines other divisions of practice will be made and specialties will multiply. And this need not bring confusion nor added hardship to the unfortunate sick. He can receive far better treatment, in any ailment, at the hands of his family physician than he could have received before the days of specialism. And what an added blessing it is to the sorely afflicted that now his hopes and destiny are not necessarily limited to the knowledge and skill of the practitioner of medicine. For the case that improves slowly or seems hopeless in the hands of the general physician might make a rapid and permanent recovery through the counsel or skill of competent special assistance.

There are many general practitioners who might, and some do perform skillful surgery, but the knowledge of medicine is so deep and progressive and its application so broad that he who would skillfully practice its art must necessarily give his whole time and energy to its study and application.

It is rarely ever advisable or necessary for a doctor in general practice to attempt major surgery. And with present day conveniences and speed of travel these emergencies should be rare indeed.

If a doctor is inclined to perform surgery he should either not encourage this desire or else give his whole time to its practice.

But the general practitioner does not err so much in attempting special work as in the many cases he neglects to treat or to refer to the proper source for treatment. And often when the patient is referred it is after the disease has progressed to permanent damage or beyond relief.

The obligations of the general practitioner to his patients does not end with his knowledge and skill in the use of medicine, but he should know its limitations as well. He should not only seek to know the most approved medicinal treatment in any given case, but should be able to decide whether or not that treatment is indicated in preference or to the exclusion of other methods. For instance a case of obstinate indigestion when due to a chronic appendicitis should be referred for surgical relief. If the patient neglects or refuses to seek special advice or treatment then the attending physician should treat him as best he can. But in instances of this character it is usually the fault of the doctor in not bringing the condition more impressively and clearly before the patient. The attending physician, and this applies to all doctors, both general and special, should be thoughtful and careful in referring their patients. Obligations or debts should not be paid off in this way. In this the patients welfare should

be given preference. But here let it be said that the unscrupulous and incompetent doctors, of the regular profession, are few and are fast becoming the imposters of the past.

There is no longer any bar to the deserving poor receiving competent special treatment. The hospitals and the surgeons where and to whom pay patients are sent, cheerfully accept our poor.

Of all people of any profession or trade the doctors of the regular profession, perhaps, do more charity to more individuals than do any others. Where others demand the cash or turn them away the doctor ministers to their wants and necessities without money and without price.

For its sacrifice and wonderful achievements, we owe a great debt of honor and gratitude to the regular profession of the past, and while there are many of our professions of to-day, who occupy high positions of honor and receive fair remuneration, there are many others, perhaps, who do not receive the honor and credit due them.

The goal of the regular profession of medicine is, and has long since been, harmony, system and mastery over disease and its causes. These have already been reached to a high degree. As the result of all these marvelous achievements, the greatest beneficiaries are the sick and afflicted and the millions who yearly escape disease.

ONE HUNDRED AND THIRTY-ONE CASES OF MEASLES.*

By MARSHALL A. MOORE, McVeigh.

In my experience the thing of most importance in treating measles is the prevention of complications. In 131 cases I had the following complications:

Broncho pneumonia, 4; bronchitis, 10; aphthous stomatitis, 1; mastoid abscess, 1; otitis media, 8; pertussis with pneumonia, 2; laryngitis, pharyngitis, conjunctivitis, numerous.

The first case of pneumonia was four years old and had just recovered from a spell of lobar pneumonia. The second was eight months old and had just recovered from broncho-pneumonia. The third was fifteen months old and had had bronchitis off and on all winter. It then contracted pertussis, then broncho-pneumonia and then it took the measles, this being really a complication of pertussis. This child took spasms and died. The fourth was a sister to the last, four years old. She had whooping cough as the other one did, then developed pneumonia and measles. She had been subject to bronchitis all winter. Recovery complete.

*Read before the Pike County Medical Society.

The moral to measles complications is to keep all children away from the disease, but especially those who have colds, bronchitis, pneumonia, whooping-cough, pneumonia and all kindred affections. There is a belief among the laity that children must have measles sometime and they had just as well have it at one time as another. Some even go so far as to expose their children to measles purposely, so they can get over with it. This is not only erroneous but often harmful, and the public should be educated against such beliefs.

I had three nursing babies, under six months who were exposed to measles and did not take it. One, on the tenth day after exposure, ran a temperature of about 100 degrees for about three days, but did not break out. This bears out C. Herrman's observations described in the *Archives of Pediatrics*, July, 1915, in which he proceeded to inoculate or vaccinate nursing children under six months of age by putting the virus in their noses. They did not take the measles then and when they were exposed later did not develop the disease, showing that they had developed immunity. There is room for original work along this line.

The cases of bronchitis were not the simple bronchitis which is always present with the measles. These cases happened after the measles had cleared up, running the evening temperature. They should be watched very closely as a precursor of pneumonia. The mastoid abscess absorbed in about ten days. The aphthous stomatitis ran a very high temperature for several days and there was considerable prostration, and the lesions on the tongue and lips made me fear diphtheria for a while, but they soon disappeared under local antiseptic mouthwashes.

The treatment of measles itself is simple: bed, purge, light diet, diaphoretic, cough mixture, dark warm room and prevention of complications. As soon as I am sure of pneumonia as a complication I have windows raised and apply counter-irritants to chest, give strychnine, whiskey and watch the heart.

About twenty-five of these cases were in negroes. They are harder to diagnose because the exanthema does not show on the dark skin. I found that the earliest sign of the eruption appeared in the mouth in the form of Koplik's spots, a bluish white spot, surrounded by a reddish areola, on the mucous membrane of the cheeks and lips, before the eruption appeared on the face and body. This is especially valuable in the diagnosis of measles in negroes.

The epidemic began in the winter and continued into the spring months. I was impressed with the fact that the cases that happened in the worst weather were the most severe and more prone to complications.

A whooping-cough epidemic followed that

of the measles. Holt says this often happens. Can it be that the pertussis germs are latent in the mouth and are aroused by the attack of measles? Or does the air carry it. The cases where it began in my practice had not been away from home.

My mortality was two out of 131 cases or 1.5%. One of these was the 15 months old child that had pertussis complicated by pneumonia and then was exposed and contracted measles (making it really come under by pertussis mortality). The temperature in this case went to 105 and the child had four clonic spasms. The second case was a child of four, who had recovered, I thought, from the measles. It was taken with Cheynes-Stokes respiration, eyes set in its head. It had a terrible cough, but normal temperature. I thought the symptoms were those of pulmonary embolus.

SUMMARY.

1. Keep all children from exposure, but especially those with weak lungs. If exposed treat all colds and bronchitis before the measles breaks out.

2. Babies under six months nursing their mothers are immunized, probably by their mother's milk. Vaccination against measles should be more thoroughly worked out along these lines.

3. The treatment of measles is symptomatic and prophylactic.

4. An epidemic in summer is less dangerous than in winter because of the pulmonary complications.

5. Measles is earliest diagnosed by Koplik's spots in the mouth, and this is especially valuable in negroes.

6. A whooping cough epidemic often follows that of measles.

Eclampsia Rare on War Diet in Germany.—

According to an abstract in a Danish exchange, the statistics from the largest three maternities in Berlin show that eclampsia has dropped in one maternity from 2.6 per cent. of 2,004 births in 1913 to 0.8 per cent of 1,430 in ten months of 1916; in the Charite, from 2.4 per cent of 3,570 births to 0.57 per cent of 1,400, and at the Virchow Hospital from 1.2 per cent of 3,664 child-births to 1 per cent of 2,462. Warnekros and Ruge ascribe this reduction of the number of cases to the changes in the diet imposed. In the cases in which eclampsia occurred, it was mild and brief, practically abortive. In the one exception, a quite severe case, it was found that the woman's husband, being a diabetic, had secured large extra amounts of meat and butter. The tables given show that the number of cases of eclampsia was less in 1913 than in the year or two before.

ECLAMPSIA.*

By Z. A. THOMPSON, Pikeville.

At our last meeting, I promised to write a paper on the important subject, "Eclampsia," one of the most dangerous complications that may befall the pregnant woman.

As a matter of convenience let us divide the subject into three varieties, namely: Eclampsia of pregnancy, eclampsia during child birth, and puerperal eclampsia.

It is claimed by the most eminent writers that eclampsia occurs once in about 600 pregnancies. It is also claimed that primipara are more afflicted than multipara, and judging from my limited experience, I am of the opinion that such is the fact. Though it is also further claimed that the prognosis is usually worse or more unfavorable in the multipara.

This grave complication usually occurs during the last 2 months of gestation, but of course may take place much sooner, say: in the third, fourth or fifth months.

In about 40 per cent, the convulsions occur during pregnancy (that is before labor begins), about 60 per cent during labor, and about 15 to 20 per cent. after child birth, or the puerperal state.

Owing to the fact that pregnant women have been subject to eclampsia since the beginning of time, it naturally strikes me as being exceedingly wonderful that research or science has not discovered the cause and a rational treatment.

The theory that eclampsia is due to some toxemia is most generally accepted, yet the true source of the poison is unknown.

If we knew the toxins were from the liver, the kidneys, the intestines, the placenta, the fetus, (or from high blood pressure, as some authors claim) these facts would assist us in our treatment immensely, but as yet, we are groping blindly.

The most imminent authors claim, I believe, that near 60 per cent. of women afflicted with eclampsia die. This mortality is surely given for those who are treated in a well equipped maternity hospital, as it has been my sad experience that 90 per cent die under the best care in general practice and sometimes the other 10.

I repeat, it is claimed, owing to the fact, I presume that renal diseases is more common in multipara, they usually suffer worse when convulsions occur.

Eclampsia occurring during gestation has the highest mortality, during labor or child birth less, and during the puerperal state the least.

As to the child the chances or prognosis is not so favorable as the mother, the mortality is usually higher.

As it may die from prematurity, toxemia, asphyxia by the repeated, severe convulsions of the mother, by drugs given to the mother, by injuries sustained during birth, or the child may die, it is claimed of eclampsia after delivery.

In fact we should be exceedingly cautious as to our prognosis, as to mother or child, as many things may cause death of a woman or child after we think they are safely out of danger.

TREATMENT

We will speak first of preventive treatment, as I said above we could speak more rational if we knew the cause of eclampsia, but as we do not know the cause our preventive treatment must necessarily be symptomatic or in other words due to the best we can under the circumstances. Prevention consists in diet, keeping the bowels, kidneys, and skin in good condition.

GENERAL TREATMENT

When the pregnant, parturient, or puerperal woman has a convulsion we may know it is a serious case, one that calls forth our best efforts.

There is two general plans of treatment. First, the so-called conservative, or "watch waiting," with the administrations of various drugs, such as veratrum, by mouth if possible, sodium bromide and chloral by rectum, and await the natural process of labor. A course I shall never again pursue. God being my helper.

I think the wise course to follow in these cases if circumstances are such that it can be done, is to remove them at once to the nearest maternity hospital, if this is impossible make the surroundings in the private home as comfortable and sanitary as can be done. Call another physician, two, if necessary, and a good trained nurse if one can be gotten, if not, select some sensible woman as principal nurse.

It is the pregnancy that favors the development of eclampsia, if we cannot prevent or cure the disease we can remove the pregnancy, which I believe we should do, as when we adopt the "watchful waiting" plan we are only "gambling with death."

The advice of most authors, as well as my limited experience teaches me that the careful, though rapid emptying of the uterus under an anesthetic after the first convulsion gives supremely the happiest results, as it is a fact in most cases the convulsions after a short time, at least become less severe and the woman goes on to slow recovery.

Gentlemen, let others do as they may, the above is the course I shall pursue in the future management of such cases.

In conclusion I trust you will feel free to

*Read before the Pike County Medical Society.

discuss this paper. I shall appreciate any suggestions from any one whether they be in keeping with my opinions or not. Every physician has a right to his own views.

THE RURAL PHYSICIAN AND THE DIAGNOSTIC LABORATORY.*

By CHARLES K. BECK, Louisville.

Because of inconveniences of one kind or another, a well-equipped laboratory must be located in a center of population. Patronage from a large number of physicians is necessary to its support. The larger the city the more accessible the laboratory is to the physician in the territory surrounding, because of greater facilities for transportation.

Reports by wire and mail can be more promptly made also, because of more numerous mail deliveries and of better connections by wire.

Also the laboratory must be where its supplies, such as stains, chemicals, glass ware, repairs, etc., may be had on short notice. This obtains only in the city. As a rule laboratory reports must be gotten out promptly, and the delay a laboratory in the country might experience because of a broken lense or something else just as important, might be fatal. As is known to most of you, while I was at Horse Cave I attempted to do some laboratory work: but the inconvenience was too great for any reasonable degree of success, where I am now if a lense should break just at the time I most need it or I should need some unusual stain or chemical, I know that in a few moments just what I want will be delivered to me at my laboratory.

Laboratory work is a specialty as much as is eye, ear, nose and throat, surgery, and skin, etc. Specialists have found it necessary because of reasons given above to locate in cities.

The laboratory expert is not called upon for assistance as frequently by physicians in the country as in the city. Almost every one of those in the city, who patronize my laboratory send me one or more specimens of one kind or another each month, while it is frequently six months or a year between specimens from my friends in the country, and I know they are doing just as much work and seeing just as serious cases as my city friends.

Having myself practiced in the country I know some of the why. It was my custom to examine sputum for tuberculosis, make chemical and occasional microscopical urinalyses; and that was about the limit of laboratory work rendered to my patients. It never occurred to me to give my patients the benefit of a Wassermann test, a Widal, a blood count, and X-ray, or to attempt to cure their infect-

ions with bacterial products prepared scientifically in the laboratory.

I was afraid my patient would object to the price. But I have learned long since that as a rule patients appreciate everything being done for them when sick that the science of medicine can do, regardless of price; and they never cease to thank the doctor, be the issue what it may, life or death, for giving them every aid to a speedy recovery. It is true that; "All that a man hath will he give for his life." There are a few exceptions to the rule. It occasionally happens that a patient objects to the expense; and those are frequently the patients the family physician finally finds it necessary to send to the city for treatment. There they go the rounds of the surgeon, the specialist, the pathologist and X-ray laboratories, the hospital, and the undertaker without murmuring one word of complaint as to the price. If his family physician had been a little more firm in his demands for the necessary laboratory work at a time when he could have been saved, he would still have been above ground and his children still drinking milk and eating honey. Furthermore the money spent in the city could have been kept at home where some of it would have eventually found its way into the pocket of the family doctor.

Where patients are unable to pay for laboratory work or where they are able to pay only a part, the same courtesies are extended to the profession in the country as in the city. For the accommodation of physicians who send me all their work, I frequently make reductions to suit the financial condition of the patient even to rendering services absolutely free of all charge no matter what the expense to the laboratory. So poverty is no excuse for not using the laboratory.

I wonder if frequently the doctor does not reason inwardly that the laboratory man is too far off to render him the service he needs as promptly as he needs it. To the doctor in Kentucky who does I want to reply that there is a laboratory almost as convenient to you as to the physician in the city. For instance, through this town there are four trains daily to Louisville and by them at four different periods of the day specimens may be mailed or sent to the laboratory. Reports may be made by wire or phone if preferred. Specimens from the country are given precedence over specimens from the city because of the difference in distance. Report may be made on a specimen mailed here in the forenoon by wire or mail in the afternoon, unless an extended examination is necessary. No physician would expect as early a report from a Wassermann or a Widal or some other laboratory stunt that requires some time in the doing.

*Read before the Hart County Medical Society.

In the main rural physicians are not ignorant of the value to both patient and physician of laboratory work. They have never gotten into the good habit, however, of depending on the laboratory as much as their best interest demands.

It is not within the scope of this paper to discuss the dependability of the Wassermann reaction nor the use of vaccines as therapeutic agents; but the fact that these tests and agents are used generally by those who are acknowledged leaders in our profession is some argument at least in their favor. And I have yet to meet the physician who has learned to depend upon laboratory work in any one or more class of cases who has not continued to depend upon it with constantly increasing satisfaction. So my plea to my brothers in the profession is do not neglect in any instance this important aid to diagnosis.

There is a lack of knowledge of technique on the part of the physician generally in securing specimens for laboratory work. Therefore I make no apology for going into some details. Of urine, fresh specimens, preferably the morning specimen, should be secured under as aseptic conditions as possible, by catheter if practicable. Two or three ounces poured into a bottle which has been sterilized by boiling is all that is necessary. Use no antiseptics or preservatives.

Blood for counting should be drawn from a pricked finger or ear properly diluted into specially prepared pipetts. These are mailed by the laboratory on request with full directions as to use. I would suggest that requests for these should be made by wire or phone as it will avoid delay. There will be a little more delay for this examination than for any other that demands a quick report. Even at that a telephone message in the morning would get the pipetts to you so you could mail them back in the evening and your report reach you on the same day.

For differential blood counting and examination for parasites thin smear should be made on two or three slides which are allowed to dry in the air before being placed together. Slides are mailed on request. The laboratory can not make hemaglobin tests as well as you can yourself, unless the patient is sent to the laboratory. I would suggest that the Talquist hemoglobinometer be used.

For a Wassermann test or a Widal one or two cubic centimeters of blood should be drawn from a vein with a hypodermic syringe. This is placed in a small bottle which has been sterilized by boiling. Widal test may be made from dried blood, but above method is preferable.

Feces should be secured by catharsis and placed in a sterile bottle. Gastric contents should be secured by tube or emesis. Tissue

should be placed in sterile bottle in normal saline, never in alcohol.

If vaccines are desired, pus should be obtained under aseptic precautions in a sterile bottle. For simple diagnosis, thin smear on a slide allowed to dry in the air, is all that is necessary.

In all cases name and address of patient and examination desired should be furnished. The laboratory has lost some good accounts because name and address were not given. I mail attached to report a bill which I expect the doctor to hand to the patient, if he thinks it is a proper charge. If the amount is not right, please return bill with comments. are mailed monthly to the patient until the bill is paid unless some special understanding obtains.

What the laboratory has done toward stamping out such contagious diseases as typhoid fever, malaria, yellow fever, hookworm, bubonic plague, tuberculosis, etc., is well known to you. Its contribution to medicine has been greater perhaps than any other agency. Modern surgery was made possible by the laboratory. Pathology as a science is based upon it. The dental surgeon is now turning to it to find the solution of his perplexing problem, pyorrhoëa alveolaris. I do work for almost as many dental surgeons as physicians.

What the laboratory has done for the profession at large it will do for individuals; and in course of time the physician who neglects to use the advantages offered by the laboratory will find this very neglect turning gradually upon him and taking away from him the practice which surely he does not deserve.

Efficient pasteurization destroys disease germs in milk, but it should not be regarded as an insurance against the future contamination of the milk. The same care should be taken of it as ordinary milk.

How to pasteurize milk at home. In a pail of about eight inches in diameter and six or seven inches in height place a saucer. On the saucer place a bottle of milk, leaving the paper cap on the bottle but perforating it with a clean fork. Add enough lukewarm water in the pail to bring the top level of the water nearly to the level of the milk. Place the pail and contents on the stove and heat until bubbles begin to rise around the bottle. Remove the pail from the stove and allow it to stand for thirty minutes. The pail should be covered. The bottles should then be removed and cooled at once and kept at a low temperature until used. All pasteurized milk more than twenty-four hours old should be thrown away.

FRACTURES.*

By ARTHUR C. HENTHORN, Garrison.

In studying over the various conditions which are interesting to the Lewis County Medical Society, it occurred to me that perhaps fractures would be best received.

Fractures may be divided for convenience and simplicity into two great classes, namely: simple and compound, and undoubtedly, this is the classification which most interests the present day surgeons. Because at the present time, owing to the conflict in Europe with the subsequent involvement of our own country, infection of compound fractures has been the bug-bear to all surgeons concerned, and who knows, but what in the near future some of us or all of us may be called to administer to those injured by shell, shrapnel, missiles from the ordinary army rifle, and in consequence thereof, we would encounter numerous compound fractures.

Simple fractures may be further divided into: transverse, longitudinal, oblique, impacted and comminuted. Of this classification, the two which are of most importance to us, are, the impacted and the comminuted. The former being the more frequent, a notable example being, Colles'. Although in fractures of the skull we nearly always see a comminution, the inner table suffering the most severe splintering.

Compound fractures may be either simple or compound.

A simple compound fracture is a transverse or oblique fracture of one or more bones, with a subsequent exposure of the bone through the integument, whereas, a comminuted compound fracture is, what the name implies, a splintering of the bone with exposure of it through the soft tissues, and this is the class of fractures with which we will have to deal in the various gun-shot wounds, though it is not impossible to have a transverse or oblique fracture from one of the modern rifle balls.

In dealing with fractures, there are several iron-clad rules which we are forced to observe, all of which are of vital importance, and to enumerate them in order of importance, would be folly to try, therefore we will take them as they come to mind. The first being:

Always treat a simple fracture as such and never open it up unless all other methods fail. This is the consensus of opinion of all of the late day writers, and they only agree to open up then, under the most strict asepsis and the operator should be absolutely sure that his technique is perfect. There is one possible exception to this rule and that is in injuries of the skull. If you will pardon a personal ease, several months ago a boy 20 years of

age was hit on the head with a limestone rock about the size of a hen egg, the blow knocked him down, but he got up, walked in the house and the next day they sent for me. Upon examination there was very little depression, probably one-fourth of an inch, but the corresponding paralysis was all out of proportion, the left side of his face and the left arm being out of commission. Upon opening the skull there was extensive fracture lines, the inner table being splintered, in fact we took out a piece about an inch and a half in diameter, and repaired a small laceration in the dura. A peculiar feature about this case was that we had no cerebral hernia.

The second rule to remember is, that we cannot reduce a fracture with a splint, they must first be reduced by the various manipulations, the splint only to be applied after the fragments are in apposition and then to act as a support.

Another rule in fractures around joints is to dress these fractures in a position which would give the most degree of usefulness in case there should be any great amount of ankylosis.

Do not be too hasty in reducing a compound fracture, wait a few days, place the patient in a comfortable position, apply your dressing to the wound, and wait for infection, there is plenty of time to reduce the fracture, so why reduce and take the risk of losing the limb and probably the life when a few days will not only keep you on the safe side but will not enhance the recovery one day. You will get a far better result and the patient will gain the use of the limb in a shorter time.

Always break up an impaction, this should be an invariable rule, for unless the impaction is broken up we cannot hope to get a proper reduction, and will get impaired motion and more or less impairment of function.

When a surgeon is called to reduce a fracture there are several items which demand his attention, if it be a simple fracture he considers correcting the deformity, getting a perfect alignment, for a fracture properly reduced will not produce pain, that is, the pain subsequent to the reduction will not be severe enough to require the use of an opiate.

I believe that all fractures should be X-rayed and the majority of fractures should be reduced under a general anesthetic.

The treatment of compound fractures has up until recently been very unsatisfactory, the percentage of infections very high and the results poor, but thanks to the Carrel-Dakin solution the infections fewer, the general results better.

The late teachings on compound fractures is to wait until the period of infection has passed, five or six days, reduce under a general anesthetic, wait until the swelling has

*Read before the Lewis County Medical Society.

subsided then apply a Plaster of Paris splint leaving a window for inspection and let Nature do the rest.

Non-union of fractures is a condition which fortunately we are not called upon very often to treat, but when they do occur, requires quite a little skill to repair.

A simple method and one which all can practice, is, to rub the ends of bone together. This is said to cause an irritation of the bone with a throwing out of lymph and a subsequent development of osteoblasts followed by a new bone formation. But the trauma done to the surrounding tissue is very frequently more deleterious than if we would go ahead and do an open operation, using Lane's bone splints or do a bone transplant.

If you will again pardon the personal reference, I saw two of Dr. Forrester's patients in the West Side Hospital, upon which he had operated and had the pleasure of having him explain his technique.

Both of these cases were for non-union of the tibia and he used a circular saw arrangement, two little circular saws parallel to each other and electrically driven. He begins four or five inches above the line of fracture and saws through the bone to the medullary canal, extending the line through the line of fracture and to a point two or three inches below the line of fracture, he then chisels out the ends of the pieces and removes them, he then bores a series of holes along the sides of the canal thus formed and threads these with kangaroo tendon, he then replaces the fragments which have been removed and in doing so, places the long piece where the short one was and the short one where the long one was, thereby forming a natural bone splint, tying the pieces in situ with the kangaroo tendon.

He says that these cases have a perfect union in from three to six months, and that he always tells his patients that they must not expect to get well in six or eight weeks for it takes quite a little time for the formation of new bone after these operations

Tardy Congenital Syphilis.—The boy of 10 had always seemed to be healthy except for what was assumed to be lupus of the hard palate and nasal mucosa, which had begun two years before. The Wassermann reaction was negative, the Pirquet pronounced, but under potassium iodid the lesions have almost completely retrogressed. The assumption of syphilis was confirmed by examination of the boy's three sisters who all presented tertiary syphilitic lesions and stigmata, although not previously recognized as such. The five cases reported are instances of the damage wrought by failure to recognize the manifestations of inherited syphilis when they appear first as the child approaches puberty or the twenties with nothing to suggest syphilis before.

INFECTIOUS MENINGITIS; A STUDY OF 27 CASES IN 586 AUTOPSIES.*

By STUART GRAVES, Louisville.

Of 586 autopsies done in the pathological laboratory of the Medical Department of the University of Louisville and of the Louisville City Hospital between September 1, 1914, and April 1, 1917, 27 revealed lepto-meningitis, a percentage of 4.6. From a study of this material it is our purpose to present some statistics and conclusions of interest and value particularly to the clinician. It must be borne in mind that some of these subjects were Coroner's cases which had been sent into the laboratory for autopsy and had not been on the wards at all; some were practically moribund when admitted to the wards and some, it must be confessed, did not come to autopsy with as complete and accurate records as could be desired. The cases examined were briefly as follows:

ABBREVIATED PROTOCOLS OF THE CASES.

1. A 14-3 Adult, female, white, age unknown. Coroner's case. Excerpt from chart: Admitted September 12; provisional diagnosis, septic meningitis. Died that afternoon. Temperature 99.1; pulse 126; respiration 28. Patient irrational on admission. Six days before, while working in a stable, had become irrational. Three days later condition became so aggravated that he was dismissed from work. Gradually developed coma, in which condition he was brought to hospital with psychomotor unrest, retraction of eyes, contracted pupils, positive Kernig. Lumbar puncture showed bacillus mucosus capsulatus.

Autopsy findings: Pia-arachnoid of cerebnum cerebellum and cord covered with thick, yellow, mucoid exudate. Smears and cultures showed Gram negative, encapsulated bacilli, gas, acidified milk and thick, mucoid growth on agar. Bacteriological diagnosis, bacillus mucosus capsulatus. Lungs and middle ears negative.

2. A 14-11 Negro, female, 8 months old. Excerpt from chart: Admitted September 24; died October 4. Clinical diagnosis, tuberculous meningitis. Uncle living in house during first four months of child's life had tuberculosis. Last four months patient had cough, spasm with vomiting and later crepitant and moist rales over right apex. Spinal fluid: No organisms found, moderate increase in lymphocytes. Temperature 98.6 to 103.4; pulse 130 to 154; respirations 26 to 64.

Autopsy findings: General miliary tuberculosis of lungs, liver, spleen, kidneys, ileum and meninges of brain and cord. Grayish ex-

*Read before the Jefferson County Medical Society.

update along left middle cerebral vessels, beginning over right Sylvian fissure and extending chiefly over base of cerebrum around circle of Willis. Scattered miliary tubercles also found. Cord not removed.

3. A 14-16. Negro girl, 16 years old. Coroner's case. Excerpt from chart: Admitted October 12, died October 16. No history obtainable because of condition of patient. No neck rigidity present afternoon before death. Spinal fluid showed 723 polymorphonuclear leucocytes per cubic millimeter; coagulated in heating for globulin test. No Kernig obtainable. White count, 6,200; polymorphonuclear leucocytes, 66 per cent. Temperature 98.4 to 101; pulse 92; respirations 28.

Autopsy findings: Pulmonary tuberculosis. Miliary tuberculosis of spleen, liver and kidneys. Pia-arachnoid grayish and slightly thickened along middle cerebral arteries, but no frank exudate. Similar condition in upper portion of cord. Sections showed tuberculous meningitis of cerebrum and cord.

4. A 14-27. White, male, 23 years old. Coroner's case.

Excerpt from chart: Patient had been thrown from motorcycle on September 17, 1914, and sustained fracture of frontal bone. X-ray showed fracture of left frontal bone extending from outer angle of left eye upward and across median line. Ran irregular temperature, 97.4 to 100.4. Discharged October 15th with normal temperature, pulse and respirations. Readmitted October 23rd and trephined October 26. Died that afternoon. No symptoms recorded. Temperature 98 to 104; pulse 120.2; respirations 22. Lumbar puncture day of admission showed 2070 cells per cubic millimeter; 98 per cent polymorphonuclear leucocytes. Lumbar puncture two days later showed 1330 cells per cubic millimeter; 83 per cent polymorphonuclear leucocytes. Smears and cultures showed pneumococci.

Autopsy findings: Entire surface of pia-arachnoid of brain and cord covered with a grayish white exudate. Sections showed acute lepto-meningitis.

5. A 14-42. Negro, female, adult, age 59 years.

Excerpt from chart: Admitted November 6; died November 6. Complained of pain in head, neck, chest and back. No ante-mortem diagnosis, lumbar puncture, physical examination or blood count recorded. Temperature subnormal until last day when it rose to 103; pulse 78; respirations 24.

Autopsy findings: On right side of longitudinal fissure pia-arachnoid opaque and yellow, most marked along course of vessels. Similar condition along middle cerebral ar-

teries, more marked over base of brain. Smears from exudate showed pus cells and Gram positive, lancet shaped diplococci, morphologically pneumococci.

6. A 14-55. Negro, female, adult.

Excerpt from chart: Admitted November 25, died at 3 P. M. Provisional diagnosis: Cerebral hemorrhage.

Autopsy findings. Lobular pneumonia. Meningitis. Small localized areas of grayish exudate over surface of brain, most marked along margin of cerebellum. Cord grossly negative. Smears from cerebellum showed Gram positive, encapsulated diplococci, morphologically pneumococci.

7. A 14-73. Coroner's case outside. Negro, female, adult. No history.

Autopsy findings: Entire surface of pia-arachnoid of cerebrum, cerebellum and cord covered with thick, yellow, purulent material, especially along vessels. Middle ears negative. Smears showed many pus cells and Gram negative, biscuit shaped, intra and extra-cellular diplococci, morphologically meningococci.

8. A 15-20. Negro, male, adult.

Excerpt from chart: Patient admitted January 28, at noon. Died at 9 P. M., Admitted unconscious. No history or physical examination on chart. Temperature 101.6 (axillary); pulse 140; respiration 48.

Autopsy findings: Lobular pneumonia. Along vessels of pia mater of dorsum of brain were seen yellowish, opaque stripes. Over frontal lobes there was a thick, dense, opaque yellowish material beneath pia entirely concealing the vessels and brain tissue. This thick, dense, opaque, yellowish material found beneath pia in region of pons, medulla and under surface of temporal lobes. Beneath pia of spinal cord were seen yellowish areas varying from 1 to 4 mm. in diameter, scattered throughout its entire length. Smears showed pus cells and Gram positive diplococci, encapsulated, morphologically pneumococci.

9. A 15-33. Negro, male, adult.

Excerpt from chart: Admitted March 6, died March 9. Patient delirious; no history obtainable. Neck stiff. Kernig positive. Spinal puncture showed white blood cells 186; polymorphonuclear leucocytes, 68 per cent; lymphocytes 32 per cent. (Blood ?); no tubercle bacilli found. Blood count, March 6: white blood cells, 10,600; polymorphonuclear leucocytes, 80 per cent.; red blood cells, 2,500,000. Temperature 100 to 102.4; pulse extremely irregular, 60 to 150 with daily change; respiration 20 to 40.

Autopsy findings. About poles of temporal lobes, pons and optic chiasm pia-arachnoid showed grayish yellow, thick exudate along vessels. Cord showed occasional yellowish

gray, rounded nodules 1 mm. in diameter. Smears from meninges of brain and cord showed numerous lymphocytes and tubercle bacilli. Sections showed miliary tuberculosis of lungs, spleen and liver and conglomerate tuberculosis of adrenals. Middle ears negative.

10. A 15-45. Negro, male, 58 years old.

Excerpt from chart: Admitted March 13, died April 6. History of two attacks of rheumatism, last one six weeks ago. Clinical signs and symptoms showed consolidation of base of upper lobe on left side. White count just before death showed 1500 leucocytes.

Autopsy findings: Vegetative endocarditis. Infarct of left lung. Cerebro-spinal meningitis. Pia-arachnoid over medulla, pons and cerebellum and inferior surfaces of frontal and temporal lobes presented a dense, opaque, grayish-yellow exudate 2-3mm. thick. Similar exudate over entire spinal cord. Smears from meninges showed Gram positive, encapsulated, lancet shaped diplococci, intra and extra-cellular, with cultural characteristics of pneumococci.

11. A 15-53. Male, negro, 66 years old.

Excerpt from chart: Admitted March 19, died April 19, No diagnosis recorded. Temperature ranged between 97 and 100; pulse 72 to 98; respirations 20 to 30.

Autopsy findings: Cerebral lepto-meningitis. Infarct of right lung. Pia-arachnoid showed grayish-white streaks along vessels near vertex and over parietal lobe and posterior portion of frontal lobe on either side. Smear from meninges showed Gram positive, spherical cocci in short chains up to eight units, morphologically streptococci. Middle ears negative.

12. A 15-57. Negro, male, adult.

Excerpt from chart: Admitted January 21, died April 29. Suprapubic cystotomy done immediately after admission to relieve complete anuria and greatly distended bladder, urethra being occluded with stricture. Patient improved daily until day before death when he had two convulsions and ceased to breathe. Temperature irregular, 96.4 to 103; pulse 90 to 120; respirations 18 to 38.

Autopsy findings: Lobar pneumonia. Obliterative pleural and pericardial fibrous adhesions. Acute tubular nephritis. Cerebral opacity along vessels of both hemispheres on either side of fissure of Rolando, extending 3 to 4 cm., being more prominent near vertex. Smears and cultures from heart's blood and meninges (11 hours post mortem) showed morphological and cultural characteristics of pneumococci.

13. A 15-58. Negro, male, 45 years old.

Excerpt from chart: Admitted April 28, unconscious, died April 30. Provisional diagnosis: Cerebral hemorrhage. White

count, 10,000; polymorphonuclear leucocytes 72 per cent. Lungs: Some mucous rales present; no dullness.

Autopsy findings: Lobar pneumonia. Chronic myocardium. Cerebral lepto-meningitis. On either side of vessels in region of Rolandic fissure were grayish-white, opaque streaks, more marked in upper portion. Smears showed Gram positive, lancet shaped diplococci, morphologically pneumococci.

14. A 15-78. Female, negro, adult.

Excerpt from chart: Admitted May 20 and died almost immediately. Unconscious. Had been sick three weeks with frequent convulsions day and night for three days before admission. Mucous rales present posteriorly over both lungs. Temperature 99; pulse 120; respirations 32. No Wasserman done.

Autopsy findings: Lobar pneumonia. Healing pericarditis. Chronic internal hemorrhagic pachymeningitis. Sections showed also chronic lepto-meningitis. Bacteriology of meningitis not studied.

15. A 15-171. White, male, 15 years old.

Excerpt from chart: Admitted September 26; died October 24. Discharging ear for six years. Three weeks before admission began to have pain behind left ear. Physical examination revealed tenderness over left mastoid. Mastoidotomy done. Temperature on admission, 101, continued irregularly, 97.4 to 105.2; pulse 74 to 144, rising to 168 in last three days; respirations 24 to 36 in last three days. No ante mortem bacteriology. Clinical diagnosis; Otitis media. Mastoiditis. Secondary meningitis.

Autopsy findings: Acute lepto-meningitis and otitis media, left side. Left antrum chiseled out and clean. Smears from left middle ear and base of brain showed pus cells and few Gram positive diplococci, spherical, in short chains up to six units. Organisms did not grow on culture. Diagnosis, morphologically streptococci.

16. A 15-217. Negro, female, 26 years old.

Excerpt from chart: Admitted on December 31, died immediately after admission. Provisional diagnosis, meningitis. Temperature 101.8; pulse 110; respirations 28. No laboratory findings recorded.

Autopsy findings: Acute cerebral lepto-meningitis. Narrow grayish yellow streaks along vessels of cortex in region of Rolandic fissure. These streaks faded out before reaching base of brain. Smears showed Gram negative, extra-cellular, biscuit shaped diplococci.

17. A 16-11. Negro, female, 48 years old.

Excerpt from chart: Admitted December 31, died January 8. Final diagnosis: Lobar pneumonia. Physical examination showed

slight jaundice. Temperature day before death 103; pulse 110; respirations 42.

Autopsy findings: Acute endocarditis. Lobular pneumonia with sections showing acute arthritis. Healing lepto-meningitis. Smears and cultures from heart's blood, valvular vegetations along tricuspid valve and from meninges all showed hemolytic streptococci. Middle ears negative. In pia-arachnoid and convolutions about cortex of cerebrum were a few pin-head, grayish white areas. Pyorrhoea alveolaris marked.

18. A 16-115. Negro, female, 8 years old.

Excerpt from chart: Admitted May 21, died next day. Diagnosis: Tuberculous meningitis. Child had been sick since Thanksgiving. Began vomiting all food taken. Had had high temperature since beginning of trouble. Brought in in dying condition. Emaciated and anemic. Few rales in both apices; bases dull. Legs spastic. Kernig present. In opisthotonos and unconscious condition before death. At midnight convulsions every few minutes. Temperature (axillary), 104.6; pulse 144; respirations 56.

Autopsy findings: Miliary tuberculosis of lungs, spleen, stomach, pancreas, liver, kidneys, cerebrum, cerebellum and cord. Pia-arachnoid over base of cerebrum showed increase in clear watery fluid. Grayish yellow exudate along vessels near Sylvian fissure and over base. Similar exudate over cerebellum with numerous scattered, pin-head areas. Left caudate nucleus showed marked softening in area 2 cm. in diameter which extends to anterior limb of internal capsule. This area was pinkish yellow, soft and mushy. Sectional showed tuberculosis. Smears showed tubercle bacilli.

19. A 16-117. Negro, male, 35 years old.

Excerpt from chart: Admitted May 26, died May 26. Diagnosis: Oedema and congestion of lungs. Illness began three days before admission with chill and pain in back of head. This was followed by repeated convulsions. Physical examination showed moist rales over both lungs. Leucocytic count, 9,400; polymorphonuclear leucocytes, 74 per cent. Urine showed albumin. Temperature 105.7; pulse, 140; respirations 40.

Autopsy findings: Meninges of medulla, pons and base of brain showed grayish-yellow, opaque streaks along vessels. Lateral, third and fourth ventricles filled with thin, grayish yellow, purulent material. Middle ears negative. Smears from meninges showed Gram negative, intra and extra-cellular, bisept shaped diplococci. Smears from fluid in lateral ventricles showed same. Microscopic sections showed lobular pneumonia, infarct of spleen, beginning glomerular nephritis and

regeneration of adrenal cortex with numerous mitotic figures.

20. A 16-122. Negro, male, 32 years old.

Excerpts from chart: Admitted and died on June 4. Patient had been struck on the head by an automobile three days before. Morning of admission had become delirious and violent.

Autopsy findings: Fracture of base of skull involving left petrous portion of left temporal bone. Acute lepto-meningitis. Suppurative otitis media. Smears and cultures of meninges and middle ear showed pneumococci. Temperature (axillary), 103.8; pulse 86; respirations 36.

21. A 16-138. Coroner's case outside. Negro, female, adult. No history.

Autopsy findings: Generalized tuberculosis. Tuberculous lepto-meningitis. Tuberculosis of choroid plexus. Choroid plexus on either side showed grayish white, multiple, pin-head areas; on section grayish yellow and soft. Sections showed tuberculosis. Smear from meninges showed tubercle bacilli.

22. A 16-139. Coroner's case outside. No history. Male negro, 24 years old. Body restricted.

Autopsy findings: Stellate fracture of base of skull. Acute otitis media, right. Acute cerebral lepto-meningitis extending microscopically into cerebral cortex. Smears and cultures from meninges and middle ear showed pneumococci.

23. A 16-159. Female, negro, 17 years old.

Excerpt from chart: Admitted August 6, died August 8. Final diagnosis, tuberculous meningitis. Physical examination showed slight rigidity of spine. All reflexes absent. No sensation below waist. Spinal fluid yellowish and syrupy. (Froin's syndrome). Butyric acid test positive. Temperature 100 to 107; pulse 124 to 140; respirations 24 to 42. Urine showed albumin. White count 11,600.

Autopsy findings: Body restricted. Section of brain and cord showed tuberculous meningitis.

24. A 16-169. White, male, 52 years old.

Excerpt from chart: Admitted August 22, died August 30. Patient admitted semi-conscious. Complained of ear trouble. Three days before death had general convulsions. Neck rigid. Kernig positive on both sides. Spinal puncture showed pus cells and a few Gram positive diplococci; cultures negative after nine days. Leucocytic count, 14,600 to 25,900. Urine showed albumin. Mastoid operation done.

Autopsy findings: Organizing lepto-meningitis of brain and cord. Right middle ear negative; left showed mastoidotomy wound and was filled with blood clot. Bacteriology

(1 hour post portem) showed streptococci and staphylococcus aureus of meninges of cerebrum, eard and left middle ear.

25. A 16-227. White, male, 52 years old.

Excerpt from chart: Admitted December 26, died December 29. Diagnosis, otitis media, cerebro-spinal meningitis, pneumococic. Patient had been admitted to hospital on November 26 and discharged on December 16. Had been admitted for pain and discharge in right ear and paracentesis had been done. Had no temperature or other symptoms when discharged. Re-admitted on December 26 with severe pain in right parietal and temporal regions. He staggered when he walked and became delirious. On December 27 he became unconscious. Spinal puncture showed pneumococci. Right side of face paralyzed. Marked tenderness over mastoid. Neck rigid. Kernig positive in both legs. Hyperesthesia marked. Temperature varied from subnormal to 102.6; pulse 82 to 132, rising before death; respirations mostly 20 to 26; rising to 40 before death.

Autopsy findings: Acute purulent otitis media. Mastoiditis. Labyrinthitis. Acute diffuse fibrino-purulent cerebral leptomeningitis. Lobar pneumonia. Beginning central necrosis of liver. Acute glomerular and tubular nephritis. Toxic adrenalitis with regeneration (mitoses numerous in cortex). Smears and cultures from heart's blood, cerebral meninges and right fossa over middle ear showed pneumococci.

26. A 17-1. Negro, female, 40 years old.

Excerpt from chart: Admitted January 5, died January 9. Diagnosis, meningitis. Unconscious when admitted, remained unconscious to death. At times had a muttering delirium. Some ophthalmos. Pupils slightly dilated and did not react to light. Reflexes exaggerated. Babinsky positive. Incontinence of urine and feces. Spinal fluid clear; pressure not increased; apparently no cell count made. Another specimen of spinal fluid showed Wassermann positive 3 plus. Temperature showed daily rise, 99 to 104.6; pulse 88 to 124; respirations 22 to 44.

Autopsy findings: Lobar pneumonia. Gumma of calvarium meninges and cerebrum. Healing cutaneous syphilides. Syphilitic deformity of nose. Chronic valvular and mural endocarditis. Post mortem Wasserman positive 3 plus.

27. A 17-11. Negro, female, 31 years old.

Excerpt from chart: Admitted January 12, died January 23. Provisional diagnosis, multiple bruises and lacerations of right leg. Final diagnosis, tetanus. Eight days after admission patient complained of stiffness of jaws and slight sore throat. Five thousand units of anti-tetanic serum given subcutaneously and an equal dose given intravenously.

Two days later 5000 more given intravenously, the following day 6000 intravenously and 3000 subcutaneously. That day had slight convulsion of shoulders and head. Patient semi-conscious and unable to sleep. Neck and back arched and stiff. More convulsions with rigidity of neck and spine. Frequent chronic convulsions followed with profuse diaphoresis day before death. During last hours lay in stupor. Temperature rose to 100 day of admission and continued with irregular rises as high as 102.4. Pulse varied daily between 64 and 100, rising to 166 day before death and 106 on day of death. Respirations mostly 20 to 30, rising to 60 day before death. No laboratory examinations recorded.

Autopsy findings: Pia-arachnoidal space over hemispheres contained a slight excess of clear, watery fluid. Vessels distended. In sulci along left Sylvian fissure pia-arachnoid contained a milky fluid, more marked along vessels. Left middle ear contained a brownish yellow tenacious fluid. Post mortem bacteriology: Smear from left middle ear showed Gram positive, discrete, lancet-shaped diplococci, morphologically pneumococci. Smear from left cerebral hemisphere showed many polymorphonuclear leucocytes, some lymphatics and a few discrete diplococci, morphologically pneumococci. On culture a few Gram positive diplococci were found, but the growth, in spite of sterile precautions in taking culture, was overgrown with a Gram positive, irregular diphtheroid. Post mortem diagnosis: Healing otitis media, left. Healing leptomeningitis.

INFECTIOUS AGENTS AND ROUTES OF ENTRANCE.

In the treatment of meningitis as well as in its prognosis it is of the utmost importance to ascertain its causative factor. In this series the infectious agents were divided as follows:

Pneumococcus, 11 cases, 40.7%.

Tubercle Bacillus, 6 cases, 22.2%.

Meningococcus, 3 cases, 11.1%.

Bacillus Mucosus Capsulatus, 1 case, 3.7%.

Staphylococcus Aureus and Streptococcus Combined, 1 case, 3.7%.

Treponema Pallida, 1 case, 3.7%.

Undetermined, 1 case, 3.7%.

It is important also to consider the probable route of entrance of the infection to the meninges and the associated infectious lesions. As

nearly as can be ascertained in these cases those factors are shown in the following table:

Route of Entrance	No.	%	Probable Source.	
Undetermined	3	11.1	Fracture of frontal bone	1
Traumatic	3	11.1	Fracture temporal bone	1
			Fracture of base	1
			Lungs	6
Hematogenous	14	51.8	Generalized tuberculosis	5
			Acute endocarditis . . .	2
			Syphilis	1
			Otitis media	4
Direct extension	7	25.9	Nares (meningococcus).	3
Tuberculosis, body restricted, 1.				
Chronic internal hemorrhage pachymeningitis, 1.				
Unknown, 1.				

Statistics as to age, sex and race are of no particular value if they are not figured in proportion to all patients admitted. The youngest patient was eight months old and the oldest sixty-six years. On the charts of many of the patients the exact age was not stated. However, figuring babes 1 to 5 years old, children 5 to 20 and adults more than 20, the statistics are as follows:

STATISTICS AS TO AGE.

Babes	1	4%
Children	4	14%
Adults	22	82%

RACE AND COLOR.

Male	9	33.3	5	18.4	14	51.7
Female	12	44.4	1	3.7	13	48.1
Total	21	77.7	6	22.1	27	99.8

INJURY AND REACTION.

The injury was severe, with more or less extensive necrosis and acute inflammatory reaction, in the infections due to bacillus mucosus capsulatus, pneumococcus, meningococcus and streptococcus and staphylococcus aureus; less severe, with more localized tissue destruction and chronic inflammation in infections due to tubercle bacilli and treponema pallida and in chronic internal hemorrhagic pachymeningitis, although in only one case, that of a negro baby, was the tuberculous injury and reaction limited to miliary tubercles in the pia-arachnoid. As is well known, the tubercle bacilli, once they gain access to the loose tissues of the meninges, may excite a more or less diffuse and acute inflammatory reaction. As to termination, all inflammatory reactions end in resolution or organization. In only two types of these cases was there evidence of organization, in the lentic and tuberculous. None came to complete resolution, although as we shall show, at least three might have done so if they had been properly diagnosed and treated. No serious complications or organization were found.

THE SIGNS AND SYMPTOMS.

Of the signs and symptoms recorded in these cases the most common and striking include the following: (1) Fever. The temperature was elevated in every case except one in

which it was subnormal until the day of death when it rose to 103 degrees F. The highest temperature was in tuberculous meningitis in which it was recorded at 107 degrees F., although it reached 105.7 degrees F. in a meningococcus infection and 105.2 degrees F. in a streptococcus infection; (2) Headache; (3) Rigidity of Neck and Back; (4) Kernig; (5) Contracted or Dilated and Fixed Pupils; (6) Vomitus; (7) Motor Reaction to Cortical Irritation; (8) Delirium; (9) Coma; (10) Hyperesthesia; (11) Pathological Spinal Fluid.

Osler says in his text book on medicine that convulsions "are less common in simple than in tuberculous meningitis and that they were not present in a single instance in the cases which I have seen in pneumonia, ulcerative endocarditis or septicemia."

In this series convulsions are recorded in one case of lobar pneumonia and pneumococcus septicemia, in two of lobar pneumonia and healing pericarditis, in one case of complicated mastoiditis, in one of complicated otitis media and in only one of tuberculosis. Rigidity of the neck is not always present. In one case of tuberculous meningitis the chart stated positively that it was not present the afternoon before death.

The most important lesson to be drawn from this study concerns lumbar puncture and spinal fluid. The following table illustrates graphically the relation of ante and post-mortem diagnoses and the presence or absence of an ante-mortem spinal puncture.

LUMBAR PUNCTURE AND INCISION.

Case Number	Meningitis Ante Mortem	Meningitis Diagnosis Post Mortem	Lumbar Puncture Bone Ante Mortem
1	Yes	Yes	Yes
2	Yes	Yes	Yes
3	Yes	Yes (tuberculosis)	Yes (Note A)
4	Yes	Yes	Yes
5	No	Yes	No
6	No (Cerebral hemorrhage)	Yes	No
7	No	Yes	No (Note B)
8	No	Yes	No (Note D)
9	Yes	Yes (tuberculous)	Yes
10	No	Yes	No
11	No	Yes	No
12	No	Yes	No
13	No (Cerebral hemorrhage)	Yes	No
14	No	Yes (Chronic internal hemorrhagic pachymeningitis)	No
15	Yes	Yes	No (Note C)
16	Yes	Yes	No (Note C)
17	No	Yes	No
18	Yes	Yes	No (Note C)
19	No	Yes	No (Note D)
20	No	Yes	No
21	No	Yes	No (Note B)
22	No	Yes	No (Note B)
23	Yes	Yes	Yes
24	Yes	Yes	Yes
25	Yes	Yes	Yes
26	Yes	Yes	Yes (Note E)
27	No	Yes	No

Note A. Cases 3 and 9 were not diagnosed tuberculous meningitis ante-mortem apparently because all the spinal fluid was collected in one tube in each case. In the first case, the chart states, the spinal fluid contained "723 polymorphonuclear leucocytes per cubic millimeter and coagulated in heating for globulin test"; in the second cases, "186 leucocytes per cubic millimeter, polymorphonuclear leucocytes 68%, lymphocytes 32%."

Note B. Cases 7, 21 and 22 were not ward cases, but Coroner's cases sent in for diagnosis without any clinical history.

Note C. In these cases the ante-mortem diagnosis was obvious from the clinical condition. In the first there was a complicated mastoidectomy. In the second the diagnosis was made in the admission room. In the third marked signs of systemic tuberculosis were present in a negro girl of eight with positive Kernig and opisthotonos.

Note D. The infecting organism in each case was proved at autopsy to be meningococcus. Case 7 was an outside Coroner's case. Case 16 died immediately after admission. Case 19 was in the ward less than one day.

Note 1. Wassermann on spinal fluid ante-mortem and on blood post-mortem (3 hours) positive 3 plus.

From the preceding table it can be deduced that correct ante-mortem diagnoses were made in 10 of 27 cases (1, 2, 4, 15, 16, 18, 23, 24, 25, 26) and that in these cases proper lumbar punctures and spinal fluid examinations were made in 8 while in 17 of 27 cases (3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 19, 20, 21, 22, 27) correct ante-mortem diagnoses were not made and in such cases a lumbar puncture was not made in a single cases.

CONCLUSIONS.

The conclusions are obvious:

(1) Correct ante-mortem diagnoses were established in 100% of cases in which proper lumbar punctures and spinal fluid examinations were made.

(2) Correct ante-mortem diagnoses were not established in 100% of cases in which proper lumbar punctures and spinal fluid examinations were neglected.

(3) In drawing spinal fluid the second portion should always be collected in a separate clean, dry, sterilized test tube. Any blood in the specimen to be examined renders findings unreliable, wastes time and material and may lead to incorrect conclusions.

(4) A grave responsibility rests upon the doctor who neglects to have made a proper lumbar puncture and a correct examination of the spinal fluid in all cases of possible meningitis because the establishment of an early diagnosis and the employment of specific treatment with Flexner's anti-meningococcus serum are likely to save lives in meningococcus meningitis at least. The neglect of such measures, conversely, may result in unwarranted fatalities.

I take pleasure in acknowledging careful routine work in the autopsies during the period of this study by members of the laboratory staff. Drs. A. H. Stein, J. W. Moore, H. E. Rust, H. H. Reeder, H. R. Livesay and T. R. Maxwell.

SOME IMPORTANT FACTS ABOUT MALARIA.*

By C. C. BASS, New Orleans.

Malaria is one of the oldest diseases of man. It is impossible to estimate or appreciate what it has cost in human lives, health, prosperity and wealth. The civilization, rise and fall and development of countries has been dictated perhaps more by this one disease than by all others combined. It prevails to-day unchecked, except partially in comparatively insignificant areas, in spite of the fact that the specific cause of the disease and its mode of transmission have been known for many years and in spite of the further fact that we have had at our command a specific cure for more than two hundred years. There is no disease to-day for which we possess a more certain, more specific and more successful remedy perhaps, than we have for malaria. The object of this paper is to point out some of the well established fundamental facts underlying the disease, its prevention and treatment and not to bring out anything especially new. It is believed that successful control of malaria depends upon a wider knowledge of these fundamental facts and their proper application instead of upon the discovery of new facts. The trouble at present is that what is known is not generally known and is frequently not put to proper use. What should be generally known about malaria, both by the medical profession and by all others, may be briefly stated as follows:

1. Malaria is caused by an animal parasite of man, the malaria plasmodium, and not by anything else.

2. There are known to be three different species of malaria plasmodia, parasite in man, —the tertian, quartan and estivo-autumnal, but their life in the human body is very similar and the mode of transmission of each is the same.

3. The effect of malaria infection on different persons varies very greatly, from no recognizable symptoms on the one hand to destruction of life on the other.

4. Though the diagnosis can often be

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guessed correctly, the only certain way of diagnosing malaria is by proper microscopic examination of the blood and finding malaria plasmodia present.

5. Malaria parasites are transmitted from one person to another by the bite of certain species of mosquitoes and in no other way.

6. These mosquitoes are never infectious until they themselves have become infected by feeding on the blood of some person whose blood contains malaria plasmodia in proper stage of development.

7. Nobody ever gets malaria unless he is bitten by infected mosquitoes.

8. Malaria infection sometimes disappears without treatment.

9. Quinine will always cure all cases of malaria provided it is given in sufficient quantity for sufficient length of time. There may,

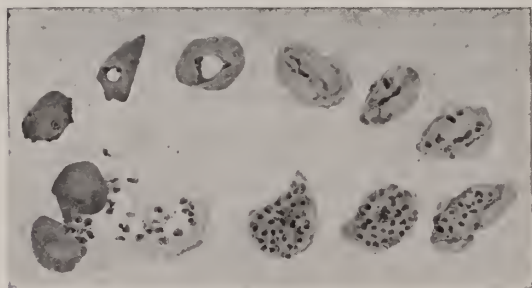


FIG. 1

of course, be exceptions in moribund cases or those in which the damage already done before the treatment is, in itself, destructive.

10. There is no other specific remedy known for malaria.

The malaria plasmodium belongs to the animal kingdom and is an obligatory parasite of man. It is not transmissible to any other animal. Certain animals, such as monkeys, dogs, cattle and birds, have somewhat similar parasites, but they are not transmissible to man. In fact, much of what we know of the mode of transmission of malaria was first learned from a study of so-called bird malaria.

Though all three species of malaria plasmodia may be found in this country, quartan is rare, while both tertian and estivo-autumnal are common. The latter two species are frequently found in the same locality, but they are not often found in the same person. Most all pernicious or fatal cases of malaria are due to the estivo-autumnal plasmodium.

If we study the development of malaria plasmodia in the blood of man we find that the youngest parasite (Fig. 1), consists of a small ring of protoplasm attached to or within the red blood cell and having a single or sometimes double nucleus rich in chromatin. As

the parasite grows hour after hour both protoplasm and nucleus increase in size at the expense of the red blood cell which serves as food for the parasite. By the end of the developmental period, which is 48 hours in tertian and estivo-autumnal and 72 hours in quartan, usually the entire red cell has been consumed except for a thin capsule surrounding the parasite. The parasite has divided into a number of divisions, each consisting of a portion of protoplasm and a nuclear granule—in fact, young parasites, at about this time, the capsule bursts, setting free the young parasites, some of which lodge upon other blood cells and pass through a similar process of development, giving rise in turn to other young parasites capable of similar growth and reproduction.

There is a great tendency on the part of all species of plasmodia to reproduce by crops, most of the parasites that divide on a given day dividing at about the same time of day. Each parasite produces a certain infinitesimal amount of toxin which is liberated at the time of reproduction. Whenever the number of parasites in the blood is large enough to produce a sufficient quantity of this toxin, it causes certain definite symptoms. The most common effect of a moderate amount of this toxin is to cause a chill and fever or fever without the chill. Since a crop of parasites is produced every 48 hours, a chill and fever occurs every 48 hours. Sometimes a person has one crop of parasites reproducing on one day and another crop reproducing on the following day, giving rise then to a chill and fever every day. In some cases of the estivo-autumnal infection, the tendency to reproduce by crops is not so marked and there is more or less continuous reproduction of parasites, giving rise to continued fever without the occurrence of chills every day or every other day.

When the number of malaria parasites that develop in a person's blood is very small, he may feel dull, languid and weak, or he may not feel sick at all. In fact, in a community in which malaria prevails, if the blood of everybody is properly examined, many persons are found to have malaria parasites in their blood, though they have no recognizable symptoms of the disease. Frequently such infected persons never fall sick of malaria. It is believed that they possess sufficient immunity or resistance against the parasites to prevent their multiplication in sufficient numbers to produce recognizable disease. No doubt a certain amount of harm is done, however, by the lightest infection. If anything occurs which lowers the resistance of such an infected person, as for instance, acute indigestion, injury, sudden chilling of the body, etc., then the parasites may be produced in larger numbers

and the individual may begin to have malaria. It is then often erroneously thought that the exposure, indigestible food or other influence caused the malaria. In a family in which there are one or more cases of malaria there are usually a large number of infected persons who have no recognizable symptoms. They, however, are likely to be a source of infection to others and of reinfection to the sick one after recovery. Failure to recognize this fact has resulted in most instances in the physician's contributing little to the control of malaria. Whenever called to treat a case of malaria in a residence he should advise that others may be infected and that all should have their blood examined and all found infected should be properly treated. It is very evident that if the sick person only is



FIG. 2

treated, which is the usual custom, and several other infected persons remain, little has been accomplished towards eliminating malaria from that family.

The only way to make a certain diagnosis of malaria is by proper microscopic examination of the blood for the parasites. Diagnosis based upon any other evidence is mere guess and will often be wrong. One might as well try to diagnose hookworm infection without a microscopic examination as malaria. Malaria plasmodia can be found in all cases of malaria or chills and fever. The time to make the examination is whenever malaria is suspected. In persons who have not sufficient parasites to produce symptoms. They some-

times may not be sufficient to be found on microscopic examination. This does not greatly depreciate the value of microscopic examination, for they can always be found in active cases, and when parasites are present in sufficient numbers to be a source of infection to others.

Whenever blood containing malaria parasites in a certain stage of development is drawn by certain species of anopheles mosquitoes, the parasites reproduce in the mosquito, (Fig. 2) giving rise to large numbers of young plasmodia known as sporozoites. The incubation period in the mosquito is from about ten to twenty-five days, depending upon temperature and other variable factors. Some of these sporozoites reach the salivary glands of the mosquito and are injected into any person the mosquito may bite. So far as now known, an infected mosquito remains infected as long as it lives and infects every susceptible person it bites. The length of life of mosquitoes varies greatly with season and many other influences. They are supposed to live only a few weeks during hot weather, but they live in a more or less inactive condition for several months during cold weather. Whether they remain infectious during this long time has not been determined, but it is supposed that they do not.

If we could prevent mosquitoes from becoming infected by biting infected people or if we could prevent infected mosquitoes from biting susceptible persons, malaria would soon disappear. Since anopheles mosquitoes feed chiefly at night, living in well screened houses is often sufficient to protect against infection.

It is not known definitely how long a person will remain infected without being reinfected, but certainly one or more years. There is, however, a tendency for the infection to disappear and spontaneous recovery to take place. Many persons get infected and finally lose their infection without ever knowing they had it. Others infected by the same mosquitoes with the same kind of parasite may be sick and in some cases die.

In considering the treatment of malaria, it should be known that though some of the parasites are being swept into the circulating blood and some can be found there at almost any time, as a matter of fact their chief place of growth and reproduction is in the capillary blood vessels of the body, especially in such organs as the spleen, bone marrow, etc. When a dose of quinine is taken, it destroys the parasites that are in the circulating blood at the time if the dose is large enough. It is eliminated from the body in twenty-four to forty-eight hours and a single dose, no matter how large, only kills the parasites circulating in the blood during this time. It does not reach the parasites lodged in the capillaries because

they are not patulous and the circulating blood containing the quinine does not pass through them. If the quinine is repeated in sufficient doses, however, on every day for sufficient length of time, all parasites that get out into the circulating blood are killed each day and finally all the parasites in the body are destroyed. The question arises as to what is the proper daily dose of quinine and over what length of time it should be given. If we consult the writers on this subject, we do not find any uniform opinion expressed. No two give exactly the same advice. The present writer does not feel prepared to say just what is the best treatment. He does feel prepared, however, to lay down a rule for treatment that is always successful. It is true that many persons get rid of malaria from taking comparatively small doses of quinine and from taking it for only a short space of time. Others fail on the same treatment. After observing the treatment of several thousand persons infected with malaria in an extensive experiment in the Mississippi Delta, I have concluded that twenty grains of quinine sulphate every day for four weeks disinfects all persons of malaria parasites. The corresponding dose for a child is one grain for each year of his age. Ten grains of quinine every day for four weeks fails to disinfect from ten to twenty-five per cent. of those infected.

Quinine sulphate by mouth is the proper form to give it in. There is no more effectual salt and there are some less effectual.

It probably makes little difference in effect on the parasites whether the quinine is given in one or several divided doses during the day. Divided doses usually produce less discomfort to the patient.

There is no other specific remedy for malaria known.

The Sargol Case.—The exploiters of Sargol, the get-fat-quick nostrum, were found guilty of fraud and were fined \$30,000 after promising that the business would be discontinued. Sargol was made by Parke, Davis and Co., at a price of 53 cents to 78 cents per thousand tablets. Sargol was stated to contain extract saw palmetto, calcium hypophosphite, sodium hypophosphite, potassium hypophosphite, lecithin, extract nuxvomica. The trial is said to have cost the United States over \$100,000. Although the business was palpably fraudulent, although the claims made for the nostrum were palpably false, the defendants were able to employ physicians to go on the stand and swear that Sargol was a "flesh builder" and "bust developer".—*Jour. A. M. A.*, March 24, 1917, p. 927.

COLLES' FRACTURE.*

B. S. LAMBERT, Owensboro.

It is a wise provision of our Creator that everything, animate and inanimate, has been furnished with means of self-protection against injury. This is seen in the small tendrils of vegetation that shuns injury by sending its vines above all chances of danger, arming the seed-pods with thorns and hulls to insure its life and give defense; spreading all possible protection. The wild boar is armed with his tusk, the rhinoceros his thick skin, the bee his sting, man his acute vision and acoustic hearing, coupled with his high involuntary telegraphy, mentally springs the quick nervous and muscular system to action, to ward off danger, save him from harm and protect life and limb. This in many cases does save us from injury; but it often fails to do so. This is the primary cause of our Colles' fracture, or silver-fork deformity, once, in time not very long gone by, treated solely as a "sprained" wrist. This fracture has happened ever since man got his being. It is found in the Egyptian mummies. It is an old, and no new thing, because of its having been called for one of the great surgeons, who had the good sense to correct the wrong opinion of its real being, who so graphically described the true characteristics and properly put us on to investigations which have been the relief of many poor unfortunates.

It is always a palmar pressure fracture, caused by our trying to save ourselves from face injuries. We unconsciously throw our hands forward to the ground and it happens. Yes, always a force extending from the palmar surface of the hands. I have seen a few cases of late years caused by the auto-crane back-kicking. The force is the same as the fall forward on hands.

It is always an impacted fracture and the methods so often used to correct it makes it more so and renders the subject a cripple for life. I have often seen old cases where no attempt to set the bones ~~were~~ ever made and I have also seen more bad surgery in this field than any other features of the long bones, and too, by good doctors. Many cases never consulted any one about his sprained wrist but let it go and he goes to his grave with a crippled hand because of non-treatment or badly treated "sprain." I cannot name on my fingers ends the number of unadjusted Colles' fractures it has been my lot to see. I fear some of them have been my old cases when I undertook to follow book surgery, written by men less able to execute in practice than tell others how to do a thing.

I have selected this particular fracture, not

*Read before the Daviess County Medical Society.

to scold anyone but to try to impress on you the needs to learn its danger, because of its frequency and many bad results following the often haphazard management in treating it. It is met with most often in old women, but may be seen in young children and is liable to injure the growth of the articular ends of bone and produce a permanent deformity and weakness of the wrist joint. It occurs ten times to all other fractures.

We find no bone in the body that has so many tendons so closely arranged around its joint; and surely none that serves so many important muscles. It is grooved on its front and radial side for the flexor tendons for the fingers, and on its posterior side for the extensors. It joins the two carpal bones, the scaphoid and semi-lunar bones and sustains almost all the weight thrown on the wrist. The annular ligaments, before and aft help to pull the lower fragment inward, at its fractured end. This fracture is in almost all cases, sloping from the palmar aspect, upwards and the upper end of the radius riding on the lower broken end of bone. This weakens the support of the joint and the hand falls to the radial side and gives the styloid process of the ulna such prominence; that it looks like we had a dislocation of the ulna. The silver-fork appearance is very well defined. The fingers are semi-closed; the tendons of the flexor muscles are pressed down and the nerves are so badly stretched that it gives more pain than any other fracture in the body. It is here you may judge when you have reduced the fracture by the relief of pain and unless you have properly adjusted the fragments you will not give relief from pain. If you have pain lasting over a few hours you may know you have not reduced the fracture. The patient will continue to suffer until you have lifted the pressure off the over-stretched nerves.

The methods of reduction given in all older books of surgery told us to grasp the hand and make heavy traction on it at the same time press upward on the end of the upper fragment till reduction was accomplished.

You will observe it is a fracture of a thin shell and spongy bone, that it is, in almost all cases an impacted one and the position of the lower end is backward, upward and inward. We have no muscular attachments to the lower fragment except the supinator longus, which is at the lower end, and no other fixed hold on it. We are making an impaction more so by this method. It does not swing loosely as other broken bones but it was caused by a force extending upward and driving the ends into each other bending the fragments out of line and locking them. The internal and triangular ligaments are torn and the supinator muscles drag the lower end inward and upward at the same time.

Now as to the bad surgery: Older methods followed by surgeons, was to grasp the hand and pull as hard on the hand as you could and at the same time pushing the upper fragment upward you could reduce the deformity. You then put on your pistol-splint turning the hand to the ulnar side. This succeeds in a few cases but it renders others worse than had no attempt been made at reduction.

The pulling of the hand serves to make impaction more so; and the useless gouging between the broken fragments only make more traumatism of the already badly traumatized parts. An inflamed condition about the tendons is already given and any undue handling of the parts may cause such a myositis as to badly damage the tendons, and their sheaths. The pulling of the hand before you have adjusted the broken fragments will assuredly lock the impacted bones that no amount of traction can dislodge them. It makes bad matters worse.

I always administer an anesthetic before I attempt to do anything; then increase the deformity as it was produced by bending the hand in the extended supinated position. This unlocks the broken ends and it takes very little effort to draw the parts to their normal position. It unlocks and relaxes the fragments and the annular ligament. While the hand is held in an acutely dorsi-supinated position, the thumb of the operator's other hand pushes forward the distal end of the fracture as the hand is semi-flexed with the underhand upward and the other hand downward, the parts fall into place and remain so.

Any kind of splint will retain the fracture in place if it has been properly set. The mechanical skill of some geni has given us many different makes of splints but this one suits me best.

After I have the broken ends in place I do not worry over the parts slipping out as the term is. It will not do so. I wash the hand and dry it well then apply soft cotton bedding and bandage lightly and leave alone for several days, and remove dressing and bathe well and adjust as before my bandage and splint. I continue to do so for at least three or four weeks before I take the splint off to remain off, but I am careful to have the patient to begin motion of fingers early and keep it up.

Active Principle of Leeches.—The principle in the buccal secretion of the leech which prevents the clotting of blood in herudin, a deutero-albumose.—*Jour. A. M. A.*, March 24, 1917, p. 931.

Many respiratory diseases following grippe are not correctly diagnosed because of our failure to recognize their origin. Some are frequently mistaken for pulmonary tuberculosis. — B. Frankel, N. Y. M. J.

ENTERO-COLITIS; SPORADIC DYSENTERY.*

By ROBERT T. HOCKER, Arlington.

Etiology. Season is first in frequency, the large majority of cases occur during the summer, and autumn months.

Sudden changes in temperature exercise a far more potent influence than great changes in humidity.

High temperature unquestionably is a powerful causative factor. The disease is very decidedly more prevalent in warm than in cold climates, yet it is found in the far north, nearing the frigid zones.

Non-malarial districts suffer far less than malarial.

Unsanitary conditions predispose to the disease, which is proven by its epidemic outbreaks in jails, institutions housing many inmates, barracks and in armies.

This form of the disease is the most frequently prevalent in the United States, and is sometimes a complication of acute infection such as malaria, typhoid fever, scarlatina, and tuberculosis. The bacillary type of the disease, or acute dysentery, is now claimed and probably it is true, is invariably due to the bacillus dysenteriae; this is not yet proved.

Epidemics are imminent in cases of famine, living quarters greatly overcrowded, and the massing of men together in war.

Epidemics through this medium may develop in a brief period of time, sudden cooling of the abdomen is a frequent causative factor.

The land we love with an intensity akin to that we feel for our lives being at war, this single menace to the lives of our noble, brave and true young men, brings intense sadness to the heart of every true American.

Symptoms: There is, rarely, an initial stage, lasting one or two days, of mild disturbance of the stomach and intestines, anorexia, slight pains in the abdomen, followed by diarrhoea. The usual course of the sporadic type begins with mild cramping in the abdomen followed by from three to six discharges from the bowels daily.

They soon become more frequent, accompanied by fearful tormina, and tenesmus. They now average from ten to one hundred or even more per day. The desire to use the commode is often well nigh constant, for many hours or even one or more days.

Stools are accompanied with an intense burning pain of the rectum during and after each evacuation.

During the first thirty-six to forty-eight hours the discharges are largely fecal, sometimes scybalous masses somewhat copious mixed with blood and mucous.

During the ensuing four or five days the discharges are scanty, amounting only to from two to four drams, and consist of a sero-mucous purulent material mixed with blood.

The chief constituents of the stools are pus, blood and mucus.

Usually there is tenderness along the course of the colon, but there is no tympanitis. In very severe types the subject becomes debilitated, followed by collapse.

Coolness of the skin, rapid failure of strength and weak, hoarse voice. The temperature is usually not much above normal, though it may reach 103-104, the amount of urine passed is far below normal.

After the first week the stools are less frequent, the amount of blood and mucus gradually diminishing. The stools become brown or dark green, fecal matter reappearing in them, the tongue is moist at first, later dry, finally may become red and glazed.

Thirst is excessive, vomiting may occur but is rare.

Diagnosis is not difficult. The frequent small, bloody or slimy stools, the distressing tenesmus during and after stools are so very decidedly characteristic of the disease. Symptoms similar to dysentery occur in strangulated or bleeding hemorrhoids, epithelioma and syphilis, but the history is different in these troubles, and a careful rectal examination settles the diagnosis.

Hemorrhage from advanced intussusception has been mistaken for dysentery. We should think this mistake is rarely made.

Treatment: Begin by keeping the patient at rest in bed in a darkened room. If evacuation of the bowels is incomplete, scybalous masses are still passing, a dose of castor oil should be given, a gentle emptying of the bowels meets a clear indication of getting the pus and fecal matter from contact with the inflamed mucous surface.

Sulphate of magnesia may be administered in dram doses at intervals of from one to four hours until the stool contains fecal matter and no blood or pus.

This remedy depletes the intestinal mucosa and does not cause excessive peristalsis. In the later stages purgatives are injurious.

The ipecac treatment never appealed to me and I have never tried it. Its nauseating effect being so objectionable, interfering with proper nourishing and the patient's comfort. Opiates in the form of Dover's powder, morphine with atropin, tincture of opium and the camphorated tincture meets the three leading indications for treatment, pain, restlessness and excessive peristalsis.

I have often prescribed subnitrate of bismuth, Dover's powder and salol in combination with satisfactory results. Bismuth alone

*Read before the Carlisle County Medical Society.

in doses of from thirty to sixty grains is valuable. Salol, opium, and silver nitrate given per orum are useful for disinfecting the intestinal canal; the nitrate of silver should be given in pill. Antiseptic irrigation by destroying the microorganisms would be a curative measure if properly carried out. In a large percentage of cases the bowel is so irritable as to seriously interfere with this method of treatment.

Before attempting their use we should use a cocain suppository or a small quantity of a four per cent. solution of cocain or tincture of opium enema, laudanum thirty drops, after which a large injection may be borne if injected slowly at interrupted intervals. The best agents are silver nitrate gr. ss to 1 per ounce, tannic acid 1 to 2 per cent, salicylic acid the same strength and bichloride mercury 1-6000.

Anders recommends the use of these remedies once daily alternately. Happy results have been obtained from rectal injections of a tepid solution of potassium permanganate 1-4000 twice daily.

Knise has produced a serum with which he has treated 100 cases, with a mortality of eight.

Shiga has discovered a serum of which he injects one dose of 40 m. in mild cases, in medium two doses of 40 m., at intervals of from six to ten hours; in severe cases a daily dose of 80 m. is repeated for two or three days.

The mortality is reduced by this treatment to one-half that obtainable from medical treatment. A favorite prescription of our late colleague, Dr. John R. Owen, given as initial treatment was a combination of magnesia sulphate, aromatic sulphuric acid and tincture of opium. I think it a good treatment. In malarial cases quinine and sometimes calomel are indicated. Complications are to be treated as per indications.

Spina bifida occulata may exist without the usual external manifestations (lipoma, hypertrichosis.) A bifidy in the lower lumbar or sacral arches is a not uncommon find in X-ray pictures of individuals who have no cord symptoms whatever. But it is also occasionally seen in those who have such cord symptoms as bladder or rectal incontinence or perforating ulcers of the foot, but no supraspinal lipoma, hair growth or nevus. An X-ray picture, therefore, may sometimes reveal the cause of a trophic disturbance, even when physical examination fails to do so.

The moist climate of Florida has been thought bad for any but very advanced—and hopeless—cases of tuberculosis; but the very large proportion of the physicians of that state, who went there for phthisis and remained there cured, is enlightening.

NEWS ITEMS AND COMMENTS

AIR.

"Free as the air,"

We hear folks say;

'Tis always there—

No cent to pay.

How strange! There's death

On every hand

When air each breath

Would save the land

More lives than War

And battle kill—

That baffling star

Is glittering still.

—Thos. Taylor, Woodbine.

During June the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Borcherdt Malt Extract Company, Borcherdt's Malt Olive.

A. Klipstein and Company, Lipoidine "Ciba."

Eli Lilly and Company: Pasteur Antirabic Preventive Treatment (Harris Modification).

Horace North: Citresia

H. K. Mulford Company: Hay Fever Pollen Fall—Mulford. Hay Fever Pollen Spring—Mulford.

Oath of the Athenian Youth.—"We will never bring disgrace to this, our city, by an act of dishonesty or cowardice, nor ever desert our suffering comrades in the ranks; we will fight for the ideals and sacred things of the city, both alone and with many; we will revere and obey the city's laws and do our best to incite a like respect and reverence in those above us who are prone to annul or to set them at naught; we will strive unceasingly to quicken the public's sense of civic duty; thus, in all these ways, we will transmit this city not only less, but greater, better and more beautiful than it was transmitted to us."

Rheume Olum.—The Council on Pharmacy and Chemistry reports that Rheume Olum (The Rheumeolum Chemical Co., Seattle, Wash.) is said to be composed of camphor 7 per cent. chloral hydrate 7 per cent., oil cajuput $2\frac{1}{8}$ per cent, methyl salicylate 25 per cent., oil cajuput $2\frac{1}{2}$ per cent., oleoresin capsicum, lanolin, white wax, "qs." The Council found Rheume Olum unacceptable for New and Nonofficial Remedies because the amount of potent oleoresin of capsicum was not declared, because the name was non-descriptive of its composition and therapeutically suggestive and because the fixed formula was considered irrational.—Jour. A. M. A., March 17, 1917, p. 865.

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NEXT MEETING STATE ASSOCIATION,
ASHLAND, 1917

COUNTY SOCIETY REPORTS

Christian—The Christian County Medical Society met in regular session, Tuesday, June 19, at Carnegie Library.

H. C. Beazley presented a splendid paper on "Headache from Eyestrain."

Randolph Dade opened the discussion.

B. A. Caudle read an interesting paper on "Dysentery."

T. W. Perkins led in the discussion.

The following physicians were present: Beazley, Sargent, Gaither, Woodard, Sandbach, Caudle, Dade, Harned, Fry, Gowers, Watts, Barnes, Thomas, Reynolds, Barker, Bell, Rice, Woosley, Stites, McGraw and Wright.

The Secretary subscribed to a Liberty Bond for the Christian County Medical Society and appropriated money out of the county treasury for that purpose. This action was approved by the society at its regular meeting.

J. W. HARNED, Secretary.

Carlisle—The Carlisle County Medical Society met in Milburn, June 12th at 10:30 A. M., with President H. T. Crouch in the chair. Prayer by Dr. R. T. Hocker. In the absence of the Secretary, Loyd Simpson was appointed Secretary protem.

J. T. Marshall opened the program with a paper entitled, "Symposium Enterocolitis in Children, Etiology Symptoms and Treatment."

R. T. Hocker read a paper on "Enterocolitis, in Adults, Etiology, Symptoms and Treatment."

D. S. Robertson opened the discussion. The doctors gave us fine papers and to the point, being freely discussed by all doctors present.

Afternoon.

On the arrival of the Secretary the minutes of the past meeting were read and approved.

Loyd Simpson of Milburn made application for membership in the society. Recommended by Drs. W. L. Mosby, T. J. Marshall and J. F. Dunn. Motion was carried and Dr. Simpson was unanimously elected as a member of our society.

W. Z. Jackson read a paper on "The Present Status of Typhoid Vaccine as a Prophylactic and as a Therapeutic Agent in Typhoid Fever. It was freely discussed by most of the doctors present.

G. W. Payne presented us with a splendid paper on "What Part Will the County Physician Be Expected to Perform in the War," which was freely discussed by the doctors present, each one expressing himself willing to go if needed.

Motion made and seconded that a vote of thanks be extended to Doctors Gilliam and Simpson and Mrs. Gilliam for their splendid entertainment and also the Baptist people for the use of their church.

Adjourned to meet at Cunningham, September, 1917, with D. S. Robertson as committee on arrangement.

W. Z. JACKSON, Secretary.

Daviess—The Daviess County Medical Society met in regular session on June 19th, out in the county. Forty physicians were present and the president, J. M. Clayton, presided.

W. L. Taylor read a practical paper on "The Home Treatment of Tuberculosis," which was pretty generally discussed.

Stinson Lambert read a paper on the "Treatment of Colles' Fracture." The surgeons and would-be-surgeons discussed it.

The matter of the Medical Reserve Corps was discussed at length. Several stated that they would be examined and offer their services but thought it a hardship to be compelled to pay expenses and lose so much time in going to Bowling Green.

A motion was carried by unanimous rising vote offering the services of the society to the Government.

The doctors in the west end of the county and their friends treated us to a bountiful barbecued dinner.

J. J. RODMAN, Secretary.

Logan—The regular meeting of the Logan County Medical Society was called to order by President Gossett.

Members present: Burr, Beauchamp, Byrne, Sr., Crittenden, Gossett, Haberer, Morgan, Piper, Richardson, Russell, Smith, Simpson, Wilkerson, Young.

The minutes of the last meeting were read and approved.

J. K. W. Piper read a paper on "Blood Pressure." Paper discussed by all, and very much enjoyed.

Motion made that Drs. Smith and Russell read their papers at the next regular meeting. Carried.

The Secretary read Dr. A. T. McCormack's letter of a recent date and Dr. Burr made the following motion:

"That any member of this society going into the service of the United States the members remaining at home agree to pay to his family one-third of any fees received from his clientele." Carried unanimously.

The motion "to add" to our bylaws was voted upon. Burr, Beauchamp, Byrne, Sr., Crittenden, Gossett, Haberer, Morgan, Piper, Richardson, Russell, Simpson, Wilkerson and Young voted "Aye." Motion carried unanimously.

The following motion was made and seconded:

"No member shall examine for any 'Regular Life Insurance Company for a fee less than five dollars \$(5.00), and the fee must be paid by the company, and members cannot make contracts by the month or year to examine for insurance

companies for we hold this to be but an evasion." Carried.

Motion to adjourn.

WALTER BYRNE, SR., Secretary.

Marshall—The Marshall County Medical Society met in the office of Drs. Stilley & Washburn, Benton, Kentucky, on Wednesday, May 23, 1917, at 1:30 o'clock P. M., with the following members present: W. S. Stone, H. I. Hughes, F. C. Coffield, J. M. Woodall, R. M. Jones, H. T. Carter, Samuel L. Henson, B. T. Hall, W. T. Little, E. D. Covington, R. H. Starks, T. B. Helm, V. A. Stilley, E. G. Thomas, J. R. Skinner, A. J. Bean, L. L. Washburn.

The society had one visitor, Dr. E. E. Smith of Symsonia, Graves county.

On account of the absence of the president, O. A. Eddleman, the society was called to order by W. S. Stone of Birmingham, after which the following officers were elected:

President, E. D. Covington, Hardin; Vice-President, H. T. Carter, Gilbertsville; Secretary-Treasurer, L. L. Washburn, re-elected.

It was decided that the next meeting of the society be held at Gilbertsville, on Wednesday, June 20th, 1917, as the guests of Drs. H. T. Carter, R. M. Jones and W. T. Little.

The president appointed Drs. E. G. Thomas, W. T. Little and Sam L. Henson to read papers at the next meeting.

Sam L. Henson was duly elected to membership in the society.

The President appointed V. A. Stilley, W. T. Little and L. L. Washburn as a committee of three to draft resolutions pertaining to the action of the society toward any of its members who might enlist in the Medical Reserve Corps of the United States Army.

The society adjourned to meet at Gilbertsville, Wednesday, June 20th, 1917.

L. L. WASHBURN, Secretary.

Montgomery—At the regular meeting of the Montgomery County Medical Society held June 12, 1917, it was resolved that if any of the doctors of this county join the Medical Reserve Corps that those who stayed at home will pay when collected, fifty per cent. to those who enlist or to their families, of all practice that would have been done by the enlisted doctors, if they were at home.

At the present time this county has 23 physicians in practice, including one homeopath and two colored. Three of these are over 70; three are over 60; six are over 50; eight are over 40; one 36. Two colored, one about 50, and one 31 or 32.

J. F. JONES, Secretary.

Muldraugh—Meeting of the Muldraugh Hill Medical Society was called to order at 10:30 A. M. in the City Hall, Elizabethtown, by President

Layman. Thirty members were present. Reading of minutes of December meeting were passed and accepted as they appeared in the Journal.

C. L. Sherman, of Millwood, reported a case which he had diagnosed as Ulcer of the Duodenum.

C. Z. Aud opened the discussion by saying that he could not see how a man could be sick if he had not used alcohol in any form. The faintest seem to think that alcohol is the cause of all diseases. He was positive that this was a case of duodenal ulcer.

Curran Pope said, on the findings it would indicate an ulceration of either the stomach or duodenum and possibly adhesions of gall-bladder.

J. S. Lutz complimented the report and thought the case one of ulceration of duodenum or pyloric end of stomach.

Guy Aud does not believe that a positive diagnosis could be made from the findings and would be slow in making diagnosis of ulcer as most of the gastric findings were negative. Likely the trouble is nervous functional.

Wm. A. Jenkins stated that it is unusual to find so many red blood cells and would not make a diagnosis from what he got from the report. Red blood count of 7,820,000 is most interesting to me.

C. L. Sherman, in closing, thanked the gentlemen for their discussion and said the case was one of duodenal ulcer. The red blood count at first threw him off. The case had no vaccine or protein to effect the count.

B. C. Wilson, of Clarkson, being unable to be present on account of illness of his father, his case report was ready by the Secretary.

Curran Pope opened the discussion by saying that his guess would be ulcer of the duodenum but would not make a diagnosis of ulcer of duodenum without the X-ray. The mere taking of a plate will tell you nothing in ulcer. Use fluoroscope and study the case. Said perspiring has its influence in seasonal pain by lowering blood pressure and thereby relieving intra-abdominal pressure.

J. S. Lutz guessed that this was a case of a hypochondriac that likely had a dilated colon as it had run so long.

C. Z. Aud: This might be rheumatism of diaphragm. Warm sun of Spring and Summer causes perspiration, brings us out and we feel better. This is a nervous condition likely.

Guy Aud: Most duodenal ulcers are seasonal. I have seen them run four or five years.

A. D. Willmoth read a paper on "Ectopic Gestation," and reported a case.

R. C. McChord opened the discussion by complimenting the paper and congratulating the doctor on the success he had with his case. He related a case of his observation of a negro woman who passed parts of a baby skeleton from time to time per rectum. Reported a case of five and one half months extra uterine pregnancy in which

child was living. Tried to persuade mother and husband to wait with a view of saving child, this they refused. Case was operated upon at once, child was very lively and might have been saved had an incubator been available. Appendix and border of omentum were found to be gangrenous and were removed as was the placenta. Abdomen was closed without drain. Patient made a complete recovery. Believes it safest to remove the placenta and not allow it to remain to slough. Lessen hemorrhage by clamping ovarian artery.

C. Z. Aud regarded it a fine paper. He saw a case in a negro woman who passed the bones of a baby per vagina, coming through the cul-de-sac. Reported a case he saw with the late Dr. D. C. Bowen; the doctor tried to carry the case along to save the baby but the woman had a hemorrhage "at the wrong time" and the baby was lost. Mother was saved by immediate operation by Dr. Bowen and himself.

Wm. A. Jenkins condemned waiting in these cases that it is alarming. Placenta is usually attached to mesentery side of gut on account of more blood supply here. Advise operation as early as possible and in emergency, application of clamp to ovarian artery. These cases rarely die in the primary hemorrhage but do not try to carry them along to save the child.

Society adjourned for dinner.

The society reconvened at 1:30 P. M.

Curran Pope, of Louisville, read a paper on "Physiologic and Radiologic Observation on the Upper Gastro-Intestinal Tract" and illustrated with lantern slides.

Guy Aud, of Louisville, reported a case of "Transplantation of Costal Cartilage for Correction of Nasal Deformity" and showed the case before and after operation by lantern slides. He, too, left after his report to catch a train.

Wm. A. Jenkins, of Louisville, gave a lecture on "Immunity, Sera and Vaccines."

R. C. McChord opened the discussion of Dr. Jenkins' talk by thanking the doctor for making his subject so plain. He cautioned against the indiscriminate use of sera and vaccines.

J. C. Mobley was glad he was present to hear this lecture as it was exactly what he had been wanting to hear.

C. T. Riggs said not much harm could be done in giving sera and vaccines if not given too close together but condemned the indiscriminate use of them.

A. D. Willmoth stated that you can do harm in giving sera and vaccines too close together. Advised giving three doses of autogenous and then one dose of stock as he thinks they work better than either alone.

J. S. Lutz: A timely and good lecture. Reported a case of a young lady who developed diphtheria after he had given her a prophylactic dose of anti-toxine, he then gave her a curative

dose and thought patient was going to die. What was the cause of this?

W. A. Jenkins, in closing, thanked the gentlemen for their discussion. Advised being careful and using judgment for you can do harm with sera and vaccines. He gets more and better results in sub-acute and chronic conditions. In Dr. Lutz's case, he got an anaphylactic dose of diphtheria antitoxine.

The society adjourned at 4 P. M., to meet at Elizabethtown second Thursday in August.

H. R. NUSZ, Secretary.

BOOK REVIEWS

1916 Collected Papers of the Mayo Clinic, Rochester, Minn.—Octavo of 1014 pages, 411 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth \$6.50 net; Half Morocco \$8.50 net.

Papers from the Mayo Clinic are always of value to surgeons and the 1916 volume is of especial interest in containing a contribution by Rosenow on the Elective Localization of the Streptococcus and the Causation of Gastric and Duodenal Ulcer by Streptococci.

The contents of the volume are surgery of the alimentary canal, urogenital organs, ductless glands, blood, head, trunk, and extremities, technique, and general subjects.

Cancer, Its Cause and Treatment—By I. Duncan Bulkley, A. M., M. D., Senior Physician to the New York Skin and Cancer Hospital, etc. In this new series of lectures just delivered at the New York Skin and Cancer Hospital, Dr. Bulkley has carried still further forward his studies on the constitutional nature and treatment of cancer, together with the blood conditions, etc. He also gives fuller data, including those for the year 1915, and an analysis of surgical statistics, with the end results.

Particular details of medical treatment are given, including a dietary, with new cases showing the satisfactory results of treatment.

Inasmuch as the death rate of cancer in the United States has continued to rise from 63 per 100,000 living in 1900 to 81.1 in 1915, or 28.7 per cent, under active surgery, such a study and development of medical treatment is most timely. Contents consist of Cancer as a Medical or a Surgical Disease; Influence of Age, Sex, Occupation, Race, Climate, and Food on Cancer; The Mortality from Cancer. Analysis of Surgical Statistics; Inoperable and Recurrent Cancer; Metastases; The Blood in Cancer; Dietetic and Medical Treatment of Cancer; Results—Personal Cases; Resume—The Real Cancer Problem.

12 mo Cloth (uniform with volume 1) \$1.50 net. Paul B. Hoeber, Publisher, 67-69 East 59th St., New York.

The Practical Medical Series, Volume II., General Surgery—Edited by Albert J. Ochsner, M. D., F. R. M. S., LL. D., Surgeon-in-Chief Augustana and St. Mary's, Nazareth Hospital, Professor of Surgery, Medical Department State University of Illinois. Series 1917. The Year Book Publishers, Chicago. Price \$2.00.

Dr. Ochsner has taken over the work of the late Dr. J. B. Murphy in editing this series of papers on surgical topics. Anesthetics are first discussed, ether, nitrous-oxide and all the varieties of local anesthesia are compared. The chapter on infected wounds is especially interesting as it deals with the new methods of combatting infection as devised by Dakin and Carrel. Dr. J. E. Gilcreest has contributed a very interesting chapter in his description of foreign clinics. All subjects devoted to general surgery are given consideration and it is a compact volume, readily available for the surgeon and general practitioner.

Principles of Treatment of Broken Limbs—By William F. Fluhrer, M. D., Consulting Surgeon to Bellevue and Mount Sinai Hospital. Rebman Company, Publishers, New York. Price \$3.00.

Books on fractures are always welcomed by the surgeon and practitioner and this volume is especially valuable in its illustrations and outlines of methods of treatment. The writer gives his early experience in Bellevue Hospital and from such early wealth of experience this book has been compiled.

Diagnosis from Ocular Symptoms—By Matthias Lanekton Foster, M. D., F. A. C. S. Member of the American Ophthalmological Society; Ophthalmologic Surgeon to the New Rochelle Hospital, First Lieutenant Medical Reserve Corps, U. S. A. Behman Company, 141 W. 36th Street, New York, Publishers. Price \$6.00 net.

In the table of contents there are twenty chapters beginning with history taking, various diseases of the lids, cornea, sclera, etc., are amply discussed.

The chapter on Amblyopia, Affections of the Color Sense and Defects of Visual Field is especially well written.

The whole book is designed to meet the needs of the general practitioner as well as the oculist.

To give greater values to individualization in a clinical case method of study, let me recommend social service training that environment may be fully understood.—Norbury, Ill. Med. Jour.

We write and preach about the danger of promiscuous spitting and yet see it done on every hand against the law without a protest.—Robertson, B. C. S. S. I.

IN MEMORIAM

Thomas Palmer Satterwhite.

There are occasions when we can not clothe in words the profound grief we endure at the loss of a true and loyal friend, yet perforce we can not refrain from giving some feeble expression to the sadness caused by their "passing away" and leave their virtues "unhonored and unsung."

The subject of this notice was at the date of his death the oldest living practitioner of medicine and surgery of Louisville, having gone about in the performance of his calling of relieving the sufferings of countless numbers of his fellow beings, Christ-like, for over 59 years.

Doctor Thomas Palmer Satterwhite was indeed a typical Southern gentleman. Physically he was of a rarely distinguished appearance, truly a handsome man, with the 'striking and courtly figure of a gentleman whose bearing was remarked in any crowd; a man of rare social qualities, a physician and surgeon of high training, wide experience, and eminent ability, a citizen well qualified for, and conscious of, and responsive to the higher obligations of citizenship. Louisville shares with the medical profession a sense of bereavement.—(Courier Journal.

He was erect of carriage, of florid complexion with hair, mustache and chin whiskers snow white, his attire always immaculate, he cheated nature out of twenty of her years, and was for more than one-half of a century a familiar figure upon our streets, known by most of our citizens.

If in a few words I were allowed to crystalize what he was I would say: He was by nature a noble, refined, polished gentleman, considerate at all times of the feelings of those he came in contact with, socially educated and illiterate; unselfish, self-denying, desirous of pleasing and always on the qui vive to do some kindness or favor; but above all, he was an humble, well-rounded Christian possessing a childlike faith.

This meed of praise is from a lifetime friend, who has known, loved and admired him for his many sterling qualities, and in whose memory he will remain an immortelle as long as life shall last.

There has always appeared to the writer, that something—an indefinite quantity or degree transpires—an act peculiarly pathetic takes place, when a good doctor dies; a niche is made vacant which is more difficult to fill, than that caused by the demise of a man in any other profession: those ties of so delicate and intimate a nature so long existing between him and his patients, broken; that complete dependence upon him in times of dire distress, illness and death, lost: the link which so long united them, forever broken. which can never again be replaced, causing a void which can never again be filled, is peculiarly distressing and difficult to bear, or again establish.

Dr. Satterwhite, as popular with his professional brothers, as is evidenced by the unusual number of positions he was called upon, or elected to fill: of this I believe I am capable of judging, as I have known of our profession in this city since my early childhood.

In 1859 Dr. Satterwhite and Dr. John Goodman established at their own expense the first free dispensary on a part of the lot occupied by the University of Louisville, which as he related to me furnished a major part of the clinical material for the University.

He was Demonstrator of Anatomy at the University of Louisville for a number of years.

In 1895 at the Baltimore, Maryland, meeting, he was elected Vice President of the American Medical Association.

He was for years surgeon to the B. & O., Big Four and Southern Railroads.

He was for several terms surgeon to the City Hospital, also at the Sts. Mary and Elizabeth Hospital: for years a Commissioner of the Kentucky Central Asylum for the Insane at Anchorage; for 8 years he was President of its Board of Commissioners; elected President of the Southern Railway Association of Surgeons; President of the State Board of Pension Examiners; Chief Surgeon of the Old Fidelity and Casualty Company, and for a great number of years Surgeon of the School of Reform.

He worked for years against marked opposition to establish a separate building for epileptic patients at Anchorage Asylum, which was so much needed; he, however, succeeded in having an "Industrial and Amusement Hall" built, at no cost to the State as from the sale from its iceplant, and other sources the Directory saved sufficient means for its construction.

These various exalted and responsible positions he filled with ability and satisfaction to those by whom he was appointed, or by whom he was elected.

It will be observed, he not only took care of his private practice but attended to the duties of a public servant to many public institutions, charities and eleemosynary institutions, where he neither expected nor received remuneration for the performance of his delicate and onerous duties for many years.

After such a long and useful life he well deserves the rest given those whose life duties have been well performed, and he will live in the hearts and memories of those he served, and whose love and gratitude hew on and still possesses.

No more need be said. To know him was to love him.

Truly, "*L'Amatit est L'Amour sans Aisles.*"

—Dr. John Breckinridge Richardson.



J. T. Stewart

PRESIDENT KENTUCKY STATE MEDICAL ASSOCIATION 1918



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BEING THE JOURNAL OF THE KENTUCKY STATE MEDICAL ASSOCIATION

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EDITORIAL

THE ANNUAL NUMBER.

This is the annual number of the JOURNAL. The officers have been spending as well as earning money for the members of the Kentucky State Medical Association. In the pages of this issue each of them will know how it has been done.

We trust every member will read the reports—especially every delegate. Constructive criticism is most desirable and praiseworthy. The Association, the JOURNAL—the whole organization is yours—the officers are chosen by you and serve under your direction. The medical profession of Kentucky is a pure democracy. It is the best organized body in the State. Its only desire or cause for existence is for the public good and the betterment of the profession.

While you are reading this issue, be sure to read the advertising pages. Those who purchased them paid more than \$5,000 for them last year. Our advertisers really publish the JOURNAL. Common gratitude will cause us to give them a fair chance at our patronage.

PATRIOTISM NOT CONFINED TO THOSE WHO GO TO WAR.

The following timely editorial in the *Indiana Medical Journal* will be appreciated by many Kentucky doctors who will “do their bit” at home:

“From various parts of the state come reports to the effect that some of the younger physicians who have joined the Medical Officers’ Reserve Corps or have accepted positions with hospital units or base hospitals are severely criticising some of their confreres for not doing likewise, and in some instances making the charge that selfishness, cowardice or lack of patriotism is responsible for failure to offer services to the country. It is a great mistake to indulge in criticism of any young doctor who does not offer his services to his country in war times. Patriotism and unselfishness is not confined to those who go to war. The man who stays at home may do so be-

cause he is compelled to do so against his desires and against his will. There may be “slackers” in the medical profession, and we strongly suspect that such is the case, but it is the height of absurdity to count as a “slacker” every young man who stays at home.

Some men must remain at home because of ill health or other physical unfitness, or because he has obligations which make it almost suicidal for him to leave, and especially in view of the fact that he can be of service at home where he is needed and where others of his kind may be needed. In short, it must be remembered that every man and every woman can do his or her part in supporting the Government in war times, and the war will not be won by putting all the men in the army, any more than it will be won by putting them all on the farms or in the factories. Doctors will be needed with the troops in Europe and in the training camps in this country, but likewise doctors will be needed at home to examine recruits and to care for the civilian population that is laboring to furnish sustenance for those who are fighting. That each man will do his part, whether at home, in office, farm or factory, or at the front in the trenches, or in the hospitals, is expected, for it is no time for shirkers, but let there be no unjust criticism of the motives of those who for one cause or another are not in the battle zone.”

WAR DOCTORS.

The *Paducah Evening Sun* contains the following timely editorial:

“The fact that Graves county and surrounding smaller cities are responding with alacrity to the call of the government for volunteers for the medical corps, does not serve to lessen the natural disappointment felt in Paducah at the neglect of an apparent duty, manifested by so many Paducah doctors. To date the only applicants from Paducah, with one or two exceptions, have been from the ranks of the senior doctors of the city, men who should be the last and not the first to an-

swer such a call, and the sum total of applicants could be counted with ease upon the fingers of the hands. The great majority of the younger doctors of the city, most of them men with lighter responsibilities than their seniors and with far less material loss to face in the event of a call to service, are holding off, and some of them frankly denying any intention to volunteer.

"In a profession that has hitherto held proud rank with the callings of the civilized world, this is a grave and regrettable situation, even if confined to localities, and the doctors of America, as a whole, should take some action to establish a line of distinction between those members who are willing to do their duty and those who are not.

"As for the government's part in it, 'slacker doctors' may rest assured that the United States will not so order its affairs that they may be left behind to fatten on the practice of those who have gone to serve, and avoid the responsibilities and rigors of army surgery. It is true enough that to any honorable brave man, the joy of service is its own reward, but the material side cannot be overlooked and it would be rankest injustice completely out of accord with the principles of universal service lately adopted by this government, to let those whose place is at the front exchange with those who might properly remain at home. There will be conscription among doctors just as surely as there is a rising of the sun, and when it comes, the man who gives evidence of slacking will probably be given a job with such discipline attached as is commensurate with the degree of his reluctance to do the right thing."

ANNUAL MEETING.

Owing to disturbed conditions in the profession on account of the war, at the suggestion of the Boyd County Medical Society, the Council has unanimously decided that the Annual Meeting of the Kentucky State Medical Association will be held in Louisville, October 16, 17, 18 and 19 this year instead of in Ashland, and that it will be held in Ashland next year. More than 300 of the leading physicians of Kentucky have already accepted commissions in the Medical Reserve Corps of the Army and this number includes practically all of the officers and the majority of the delegates under fifty-five years of age. An especially large number of the leading men in the Big Sandy Valley will be in the Army.

The meeting in Louisville this year should be the most interesting and the most largely attended one the Association has ever held. Dr. Franklin H. Martin, the head of the Medical Section of the Council for National Defense, will deliver the annual address. Dr.

Martin is one of the greatest medical organizers now living. He has been in touch with medical matters in connection with the war from the very first. He will bring to the profession of Kentucky first-hand a message bearing authority. In many respects this will be the most important medical utterance that will be made this year. Several hundred trained physicians will be at the Cantonment at Camp Taylor by that time and they will all be eager to hear Dr. Martin. The program is being rapidly completed and physicians who desire to present papers are urged to write to the Secretary at once.

Every doctor in Kentucky, who can do so, is urged to arrange to spend a week at the Annual Meeting in Louisville.

NECESSITY.

The average doctor sometimes fails to realize the importance of giving the occupation of the deceased upon the official death certificate, and yet many times he wants to see the relative rate of mortality among doctors and frequently he wants to know the relative effect of working in dust forming mills, as in planing and lumber mills. Again the physician wonders how frequently those who lead sedentary lives are affected with tuberculosis as compared with those who live out in the open, farmers for example. One frequently wonders whether typhoid fever is more prevalent in the cities than in the rural districts and what effect the occupation might have upon such ratios.

The Census Bureau is calling attention to this very vital factor in the Vital Statistics and earnestly request our profession to state concisely and clearly the occupation of the deceased. We feel sure it is only necessary to remind the profession of the importance of this request to insure uniformity in compliance with it.

THE MEDICAL PIONEERS OF KENTUCKY.

The matter for the historical number of the Journal, which the writer has engaged over a year in collecting, containing brief biographies and pictures of McDowell, Dudley, Brashear, Drake, Bradford, Caldwell, Yandell, Cooke and many others, making a volume of about 200 pages, is ready for the printer and was expected to take up the greatly increased space of the September issue, but just as it was to be sent in a complication arose about the increased cost for a permanent binding for it.

On account of the intrinsic value to the profession of the data it will contain it is proposed to put the volume in handsome leather binding, as was done with the invaluable

able McDowell Memorial volume in 1879, that it might be preserved by members, and also for deposit in such libraries as may be selected by the Association. It is also proposed that the original McDowell letters, written shortly before his death, and all of the pictures contained in this publication, properly grouped and handsomely framed, shall be presented to the Kentucky Historical Society, at Frankfort, as the nucleus for an honored collection of "The Medical Men of Kentucky" in the halls of the Capital, which it is hoped will grow through all of the ages.

The net extra cost of this binding will be two dollars per volume from each member who wants his copy in this form, and the book binding firm which made the best bid for it must know how many bound copies will be required before starting the work. If enough members to justify it respond promptly the October issue of the JOURNAL will be set apart for this historical matter.

KENTUCKY PHYSICIANS AND THE WAR.

"The Department has at its command, at present, only about one-half the number of officers that will be required for an Army of two million men," is the definite statement and implied appeal of Dr. Gorgas, the great Surgeon-General of the Army, to the medical profession of America.

On August 11, 12,379 commissions had been issued with 9,899 acceptances. Between twenty and twenty-four thousand medical officers will be needed.

Two hundred and forty-eight Kentucky doctors have been commissioned. About seventy others have applied and been rejected, most on physical grounds. Kentucky's quota will be from 620 to 680 for the first army, and half as many more for each subsequent million men.

The Medical Department of the Army is ready for the war, *provided the medical profession* furnishes an adequate personnel.

The Surgeon-General is as lovable and gentle as he is trained and efficient. To him a draft of medical men is unnecessary, because of his patriotic faith that the mere statement of the nation's dire need will be met at once and without hesitation, question or quibble by every physician in America who is worth while and who should go. There are men so situated that they should remain at home. Those with dependent families, in locations where other physicians are not available are excusable. But, practically every unmarried doctor in Kentucky should apply at once.

There are only six hundred registered physicians in Kentucky under 35 years of age. The Army has addressed a personal appeal to each of these men. They can be spared with

least sacrifice to themselves or others as a rule.

In Kentucky, as in other states, the leaders of the profession volunteered first. Every ex-President of the Kentucky State Medical Association who is under fifty-five, its President, President-elect and Secretary, have been commissioned. Every officer of the State Board of Health is under orders. There is not a surgeon in Kentucky, physically able, who has not tendered his services.

Recognizing the emergency the Surgeon-General has appointed an examining board at Bowling Green consisting of Maj. A. T. McCormack and Capts. Ernest Rau and C. B. Kobert, with instructions to make a visit to many of the medical centers of the State where they are instructed to examine physicians who are willing to serve the country.

Reader, if you are so fortunate as to be physically fit and professionally competent, will you not, seriously and conscientiously, consider General Gorgas' appeal, in the name of our country, our liberty, our existence as a free people, and, unless you are tarred by insurmountable obligations, justify his confidence in the medical profession of Kentucky! If a draft of physicians is to be avoided, and most well-advised people fear it cannot be avoided, it must be done by many and great sacrifices by four hundred more Kentucky doctors in the next few weeks.

You will receive the notice of the itinerary of the examining board within ten days or two weeks and its members will be glad to have your advice on the situation in your county and give you any information they have when they are in the town nearest you.

RANK AND PAY IN THE ARMY.

Physicians are naturally interested in rank, pay, duty and opportunity in the Army. Next upon entering the service, are commissioned as First Lieutenants in the Medical Reserve Corps. If under 34 years of age, provided the applicant has had a year's service in a good hospital, the applicant may apply for a commission in the Medical Corps of the regular army.

In times of peace a First Lieutenant may become a Captain after five years of service but in war one may be promoted as soon as one has learned the "rules of the game." In the medical training camps comparatively little medicine or surgery is taught as such. The examining board which recommends him accepts the responsibility for his professional competency. Realization on the part of the physician, whose training has ordinarily been individual, that he is an integral part of a complex organization, and that he is measured more by how well he co-operates with that organization than by individual excellence

along technical lines. Executive ability—that which can think and put thought into action along medical or sanitary lines for hundreds of thousands is at a premium, but the beginner should understand that this can rarely be exercised except by those who thoroughly understand what we who know nothing of it delight to call “red tape.” System and record is the first essential of the medical military officer.

A first lieutenant receives \$2,000.00 a year. In addition he is entitled to three-room quarters for himself and family, and to fuel and light, and if the army cannot provide him with these they pay him at fixed rates for them. He is furnished with a horse and its equipment, or, if he furnishes his own horse, he is allowed \$150 a year. His horse is fed for him. All officers furnish their own clothes and food. The cheapest equipment may be purchased for about \$65. Board or mess, as it is called in the army, will cost about \$35 a month. The balance of the salary may be saved or wasted. Army officers can arrange to have any part of his salary paid to himself in cash and the balance to his wife or his banker or any one else.

The first lieutenant who learns the Manual of the Medical Department, the Manual of Courts Martial, the Army Regulations and the Drill and Field Manuals of the Medical Department and the necessary paper work, especially if he has executive ability and can do and manage team-work, will be promoted to a captaincy. His salary is \$2,400 a year and he has four-room quarters furnished or provided him. Otherwise his perquisites are the same as a First Lieutenant.

After certain training and demonstration of ability along these same lines the Captain becomes a Major. His salary is then \$3,000, but he furnishes his own horse or horses, but is provided with six room quarters.

Next month we will talk more about his duties and responsibilities.

What a Fifty Dollar Bond Will Do.—The Proceeds of one fifty-dollar Liberty Loan Bond will purchase:

Thirteen 13-pounder shell for destroying submarines.

Four five-inch shells for the same purpose.

One hundred pounds of smokeless powder.

Eighteen gas masks for a like number of soldiers at the front.

Enough coal to drive a destroyer one hundred and twenty miles.

Enough gasoline to drive a submarine destroyer one hundred and fifty miles.

A sailor's uniform outfit.

Four months subsistence for a soldier.

SCIENTIFIC EDITORIALS

INFANTILE PARALYSIS.

One of the most interesting features of the last meeting of the American Medical Association was the symposium on Infantile Paralysis held by the sections of Pediatrics, Nervous Diseases and Orthopedics. Dr. George Draper brought out the very interesting point that poliomyelitis is the result of an infection which usually shows some gastro-intestinal symptoms of a rather indefinite character followed by a period in which there are practically no symptoms and then the paralysis occurs. He likens this condition to the curve of the dromedary; the first hump representing the primary infection, the second hump the paralysis. There are many variations of this curve. The primary infection may be severe or almost unnoticed; the paralytic symptoms may be very severe or may clear up in a few days. The intermission may vary from a few hours to some days. He believes that the infection is systemic and that it produces this paralysis as a result only when the toxine is able to penetrate the choroid plexus thus reaching the spinal system. He believes that there are a great many abortive cases and that children are thus protected from another attack. Statistics seem to show that only about two per cent. of children are susceptible to the infection.

Quite a controversy arose between the pediatricians and the neurologists as to the danger of contagion. The neurologists because they see only the terminal condition expressed themselves as not believing in the contagion of the disease; the pediatricians coming in contact with the more acute case believe in contact infection, though as stated above, the proportion who will take the disease is relatively small. The mode of entrance of the virus is believed to be through the naso-pharynx and intestinal tract. While it is generally conceded that there must be a living organism there is still considerable dispute as to its exact character. It is possible that its morphology varies under different conditions, at any rate the bacteriologists are not agreed upon its exact character.

Probably the most helpful diagnostic point is obtained from the examination of the spinal fluid. There is always an increase in the cell content varying from around fifty to over one thousand. When the cell count is high paralysis is almost certain to occur and the severity and extent of the paralysis is usually in proportion to the increase in the cell count. Spinal puncture in itself does not seem to add to the danger of paralysis, but the introduction of humanized serum into the spinal fluid is not without a certain amount of danger. Even such a slight traumatism as this may

break down the barrier interposed by the choroid plexus. For that reason it is believed that the treatment by immunized serum is best given intravenously, however it is the impression of those who have had the most experience with it that there is a decided benefit from its use. Otherwise the treatment is symptomatic, special care should be taken to keep the patient quiet and free from any nervous excitement. The period of inoculation after subsidence of symptoms is practically three weeks. But it is believed that there are carriers just as exist in other diseases.

The section on orthopedic surgery struck a strong keynote of hopefulness in the recovery of muscle strength by insisting upon voluntary attempts at movement of paralyzed limbs. They believe that by education it is possible to develop new routes of control of the muscles through centers which have not been entirely destroyed. They depreciate early operations upon the paralyzed limb trusting to the value of the educative movements even after several years have elapsed.

It was the sense of the symposium that there had been much advance in the knowledge of the peculiarities of this disease. While there is still much lacking in definite knowledge, it was felt that we are in a more favorable position to handle it now than ever before in the history of medicine.

PHILIP F. BARBOUR.

THE SCIENTIFIC INVESTIGATION OF LATHER IN SHAVING.

It would be conservative to estimate that at least 15,000,000 men in this country alone every day go through the process of lathering or of being lathered preparatory to shaving or being shaved; if we were to add to this those shavers of the rest of the globe who use lather—and it is customary to use a soapy substance among nearly every nation except the Chinese, who shave dry—the total number would reach an enormous sum. Yet probably not one per cent of all those who go through the process of lathering up have more than the vaguest sort of an idea of what they hope to accomplish by this procedure. Even long-experienced barbers who have found out that certain methods of lathering conduce to easy and pleasant shaving usually have entirely erroneous theories of why these methods are successful. One man will tell you he lathers to take the oil out of the hair so that it will be stiff and stand up to the razor; another says he lathers to soften the hair, to render it less stiff. Inquiries are occasionally directed to scientific magazines as to the action of the lather in shaving, but the answers usually show that the authors of them have not studied the subject to any ex-

tent. Since to accomplish the best results it is necessary to have an idea of what we wish to do and the best way of doing it we must study our subject along the following lines: what are we trying to do to the hair and skin with our soap and water, and what is the best method of getting that desired effect on the hair and skin?

First we must remember the histological structure of the skin and hair. The hair-shaft is made up of keratinized and flattened out cells of the same histological origin as the superficial horny cells of the skin; each hair follicle has a sebaceous gland emptying along the hair shaft and thus lubricating the hair itself and the adjacent skin. The horny cells of both the hair-shaft and outermost skin-layers are interlocked so that when a hook is caught in one of these cells it usually pulls loose a flake or squame composed of anywhere from several to scores of cells interlocked together. If water is placed on the untreated skin it does not penetrate, but gathers into droplets, owing to its immiscibility with the oil of the skin; in the same way, a hair placed in water will not take up water or swell, or at least not for a long time, owing to its being covered and permeated with oil which keeps the water out. If a hair which has not been deprived of its oil is held by one end and a razor pressed against it the hair will bend away from the razor, the flexibility due to its oily condition preventing the razor edge from entering the hard keratinized cells. The amount of oil in the hair and superficial layers of the skin varies according to the activity of the sebaceous glands and length of time of accumulation, i.e., time elapsed since previous washing. Even when the skin is clean and no oiliness is visible to the eye a knife-blade scraped across the face will accumulate a considerable amount of oil and fatty debris.

Now we come to the composition of lathers and their effect. Soap is usually a mixture of varying quantities of the potassium and sodium salts of higher fatty acids, especially oleic, stearic, palmitic, etc. When highly diluted with water these weak salts disassociate partly, so that we have some free alkali ions present. A lather of soap, water and air is able to penetrate and macerate or soften the horny cells. We see this illustrated by the action of aqueous solutions of sodium or potassium hydroxide on the corneal layers of the skin or on hair; the epithelial cells of the skin soften and swell up, so that they are easily teased apart; the hair will soften and swell, up, too, becoming jelly-like, easily compressed or crushed, and allowing the knife edge to cut through the shaft instead of bending flexibly away as before. It is true with most substances that a solvent will dissolve larger quantities and more quickly when

hot than when cold. This holds good for the action of the lather on oil; hot water-lather has a decidedly quicker action on the oil, not to mention the relaxing effect of the heat on the skin itself.

What bearing has that on the problem of an easy shave? First, in regard to the hair: if we dissolve the oil away and soften the shaft of the hair the razor will cut into and through it without difficulty; moreover the edge of the razor will suffer much less in cutting through the soft jelly-like macerated cells than it would in trying to cut through the hard interlaced cells of the untreated hair. What is the effect on the skin? Every razor no matter how sharp, has some projecting ragged points and jagged little nicks; if these are dragged across the untreated skin, even where there is no hair, these sharp points catch in the corneal cells, just as a hook would, and, owing to the interlacement of these cells, tear off plaques of cells, leaving the tender, living, non-cornified cells of the rete beneath exposed; if these plaques are deep enough the intercellular fluid spaces between the rete cells will pour out quite an amount of serum, sometime even blood. If, however, the oil has been washed out of the skin and the superficial cells have become water-swollen and soft, these sharp edges will merely cut little grooves in the outermost corneal cells, not deep enough to reach the rete cells beneath, instead of tearing these cells away en masse. Here again, the effect on the edge of the razor must be considered; it is evidently going to injure the edge much less to be slid across a softened corneal layer than across a dry, tough, horny coating that will resist the passage of each projecting point until either the point breaks or a mass of cells is torn loose.

What we want then is to get rid of the oil and macerate the skin and hair until both are soft and jelly-like with the least amount of damage and the minimum of time and trouble. There are other ways of dissolving away the oil, but none so convenient as the soap and water method. As to the second step, the maceration of the hair and skin, especially the former, after removal of the oil, a strongly alkaline solution will accomplish this more thoroughly and quickly than a mildly alkaline soap-lather, but the stronger alkali will irritate the skin, entering the tiny cuts and penetrating too deeply into the living cells of the rete. Therefore, while we may use a fairly alkaline soap to wash away the oil with this should be thoroughly rinsed off before applying the lather to be used in shaving. It should be remembered that soap does not penetrate the skin or hair, but a very dilute soap solution does; therefore, the lather should be quite watery, and wherever it dries on the face more water should be add-

ed or fresh lather applied. The skin must be kept moist.

A good way to get the best results in shaving would be to wash the face two or three times with an alkaline soap or plain face-soap, rinsing off thoroughly with water after the last washing to get rid of all oil and alkali; then the face should be well lathered with a very mild non-irritating soap, whether cake, stick or cream does not matter, more water being taken up on the brush and rubbed in whenever the lather dries out the least bit. In this way one can shave with a light stroke very pleasantly. After the shave the lather should be washed out of the skin with warm or moderately hot water, to prevent any alkali remaining to act as an irritant. No strong lotion should be used after shaving, since the skin is then oil-free and easily injured by strong chemicals.

M. L. RAVITCH AND S. A. STEINBERG.

OFFICIAL ANNOUNCEMENTS

OFFICIAL CALL.

THE SIXTY-SEVENTH ANNUAL SESSION OF THE
KENTUCKY STATE MEDICAL ASSOCIATION
TO BE HELD IN LOUISVILLE, OCTOBER
16, 17, 18, AND 19, 1917.

To the Officers and Members of the Component County Societies of the Kentucky State Medical Association:

The Sixty-Seventh Annual Session of the Kentucky State Medical Association will convene in the Auditorium of the First Christian (Dr. Powell's) Church, Louisville, Kentucky, on Wednesday, Thursday and Friday, October 17, 18 and 19, 1917.

THE HOUSE OF DELEGATES

The House of Delegates of the Kentucky State Medical Association will convene in the First Christian Church on Tuesday, October 16, 1917.

FIRST GENERAL SESSION

The First General Session, which constitutes the opening exercises of the scientific functions of the Association will be held in the Auditorium of the First Christian (Dr. Powell's) Church, Louisville, Kentucky, at 9 A. M., Wednesday, October 17, 1917.

THE COUNCIL

The Council will convene in a parlor of the Seelbach Hotel at 11 A. M., Tuesday, October 16, 1917.

THE REGISTRATION DEPARTMENT

The Registration Department will be opened in the Exhibit Hall, on the main floor of the First Christian (Dr. Powell's) Church, from 10 A. M., to 7 P. M. on Tuesday, October 16, 1917; from 8 A. M., to 7 P. M., Wednes-

day and Thursday, October 17 and 18, and from 8 A. M., to 11:30 A. M., on Friday, October 19.

APPORTIONMENT

Each chartered component county society will be entitled to the number of delegates opposite its name on the following list. Each society is entitled to one delegate for each twenty-five members, or major fraction thereof, which dues have been paid to the State Association in accordance with the By-Laws:

Adair	1	Laurel	1
Allen	1	Lawrence	1
Anderson	1	Lee	1
Ballard	1	Leslie	1
Barren	1	Letcher	1
Bath	1	Lewis	1
Bell	1	Lincoln	1
Boone	1	Livingston	1
Bourbon	1	Logan	1
Boyd	1	Lyons	1
Boyle	1	McCracken	2
Bracken	1	McCreary	1
Breathitt	1	McLean	1
Breckinridge	1	Madison	1
Bullitt	1	Marion	1
Butler	1	Magoffin	1
Caldwell	1	Marshall	1
Calloway	1	Martin	1
Campbell-Kenton	4	Mason	1
Carroll	1	Meade	1
Carlisle	1	Menifee	1
Carter	1	Mercer	1
Casey	1	Metcalf	1
Christian	2	Monroe	1
Clay	1	Montgomery	1
Clinton	1	Morgan	1
Crittenden	1	Muhlenburg	1
Cumberland	1	Nelson	1
Daviess	3	Nicholas	1
Elliott	1	Oldham	1
Estill	1	Ohio	1
Fayette	3	Owsley	1
Fleming	1	Owen	1
Floyd	1	Pendleton	1
Franklin	1	Perry	1
Fulton	1	Pike	1
Garrard	1	Powell	1
Gallatin	1	Pulaski	1
Grant	1	Robertson	1
Graves	1	Rockcastle	1
Grayson	1	Rowan	1
Green	1	Russell	1
Greenup	1	Scott	1
Hancock	1	Shelby	1
Hardin	1	Simpson	1
Harlan	1	Spencer	1
Harrison	1	Taylor	1
Hart	1	Todd	1
Henderson	2	Trigg	1
Henry	1	Trimble	1
Hickman	1	Union	1
Hopkins	1	Warren	2
Jackson	1	Washington	1
Jessamine	1	Wayne	1
Jefferson	11	Webster	1
Johnson	1	Whitley	1
Knott	1	Wolfe	1
Knox	1	Woodford	1
Larue	1		

1917 OFFICERS

DR. MILTON BOARD, Louisville, President
 DR. P. H. STEWART, Paducah, President-Elect
 DR. B. P. EARLE, Dawson, Vice President
 DR. A. S. BRADY, Greenup, Vice President
 DR. J. G. GAITHER, Hopkinsville, Vice President
 DR. W. B. McCLURE, Lexington, Treasurer.
 DR. A. T. McCORMACK, Bowling Green, Secretary.

COUNCILORS

DR. R. C. McCHORD, Lebanon, Chairman
 DR. W. W. RICHMOND, Clinton
 DR. D. M. GRIFFITH, Owensboro
 DR. J. N. McCORMACK, Bowling Green
 DR. C. Z. AUD, Cecilian
 DR. C. W. HIBBITT, Louisville
 DR. A. W. CAIN, Somerset
 DR. J. E. WELLS, Cynthiana
 DR. J. W. KINCAID, Catlettsburg
 DR. I. A. SHIRLEY, Winchester
 DR. J. S. LOCK, Barbourville

Representative on Legislative Council, American Medical Association W. A. POOLE, Henderson

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

CARL L. WHEELER Lexington
 W. W. RICHMOND Clinton
 M. E. ALDERSON Russellville
 A. T. McCORMACK Bowling Green

PERMANENT COMMITTEES.

SCIENTIFIC WORK—P. H. Stewart, L. C. Redmon and A. T. McCormack.

THE MEDICO-LEGAL COMMITTEE—J. J. Moren, Chairman; W. B. McClure and A. T. McCormack, Secretary.

LEGISLATION AND PUBLIC POLICY—C. Z. Aud, D. M. Griffith, Milton Board, W. W. Anderson and Frank Boyd.

MEDICAL EDUCATION—W. W. Richmond, David Barrow and C. A. Calvert.

PREVENTABLE DISEASES OF THE EYE—J. A. Stucky, T. L. Bailey and Seldon Cohn.

REVISION OF CONSTITUTION AND BY-LAWS—J. W. Kincaid, A. T. McCormack, J. C. Mosely, E. L. Henderson and W. W. Anderson.

COUNCILOR DISTRICTS

FIRST DISTRICT.

BALLARD	FULTON	LYON
CALDWELL	GRAVES	MARSHALL
CALLOWAY	HICKMAN	MCCRACKEN
CARLISLE	LIVINGSTON	TRIGG

SECOND DISTRICT.

BRECKINRIDGE	HENDERSON	OHIO
CRITTENDEN	HOPKINS	UNION
DAVIES	MCLEAN	WEBSTER
HANCOCK	MUHLBURG	

THIRD DISTRICT.

ALLEN	CUMBERLAND	METCALFE
BARREN	HART	WARREN-EDMONSON
BUTLER	LOGAN	SIMPSON
CHRISTIAN	MONROE	TODD

FOURTH DISTRICT.

BULLITT	HENRY	SHELBY
GRAYSON	LARUE	OLDHAM
HARDIN	MEADE	NELSON

FIFTH DISTRICT.

ANDERSON	FRANKLIN	OWEN
BOONE	GALLATIN	SPENCER
CARROLL	JEFFERSON	TRIMBLE

SIXTH DISTRICT.

ADAIR	GREEN	TAYLOR
BOYLE	MEROER	WASHINGTON
	MARION	

SEVENTH DISTRICT.

CASEY	LINCOLN	RUSSELL
CLINTON	PULASKI	WAYNE
GARRARD	ROCKCASTLE	MCCRACKEN

EIGHTH DISTRICT.

BOURBON	HARRISON	PENDLETON
BRAKEN	JESSAMINE	ROBERTSON
CAMPB'L-KENT'N	MASON	SCOTT
FLEMING	NICHOLAS	WOODFORD
GRANT		

NINTH DISTRICT.

BOYD	GREENUP	MAGOFFIN
CARTER	JOHNSON	MARTIN
ELLIOTT	LEWIS	PIKE
FLOYD	LAWRENCE	

TENTH DISTRICT.

BATH	LEE	OWSLEY
BREATHITT	LETCHER	PERRY
CLARK	MADISON	POWELL
ESTILL	MENIFEE	ROWAN
FAYETTE	MONTGOMERY	WOLFE
KNOTT	MORGAN	

ELEVENTH DISTRICT.

BELL	JACKSON	LESLIE
CLAY	KNOX	WHITLEY
HARLAN	LAUREL	

CONSTITUTION AND BY-LAWS OF THE
KENTUCKY STATE MEDICAL AS-
SOCIATION ADOPTED AT PA-
DUCAH IN 1902 AS
AMENDED.

CONSTITUTION.

ARTICLE I.—NAME OF THE ASSOCIATION.

The name and title of this organization shall be the Kentucky State Medical Association.

ARTICLE II.—PURPOSE OF THE ASSOCIATION.

The purpose of the Association shall be to federate and bring into one compact organization the entire medical profession of the State of Kentucky, and to unite with similar associations in other states to form the American Medical Association, with a view to the extension of medical knowledge, and to the advancement of medical science to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interests and to the enlightenment and direction of public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

ARTICLE III.—COMPONENT SOCIETIES

Component Societies shall consist of those county medical societies which hold charters from this Association.

ARTICLE IV.—COMPOSITION OF THE ASSOCIATION.

Section 1. This Association shall consist of Members, Delegates and Guests.

Sec. 2. MEMBERS. The members of this Association shall be the members of the component county medical societies.

Sec. 3. DELEGATES. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component county societies in the House of Delegates of this Association.

Sec. 4. GUESTS. Any distinguished physician not a resident of this State may become a guest during any Annual Session upon invitation of the Association of its Council, and shall be accorded the privileges of participating in all of the scientific work of that Session.

ARTICLE V.—HOUSE OF DELEGATES.

The House of Delegates shall be the legislative and business body of the Association,

and shall consist of (1), Delegates elected by the component county societies, and (2) *ex officio*, the officers of the Association as defined in Article VII, Section 1, of this Constitution.

ARTICLE VI.—SECTIONS AND DISTRICT SOCIETIES.

The House of Delegates may provide for a division of the scientific work of the Association into appropriate Sections, and for the organization of such Councilor District Societies as will promote the best interest of the profession, such societies to be composed exclusively of members of component county societies.

ARTICLE VII.—SESSIONS AND MEETINGS.

Section 1. The Association shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

Sec. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

ARTICLE VIII.—OFFICERS.

Section 1. The officers of this Association shall be a President, three Vice Presidents, a Secretary, a Treasurer, and eleven Councilors.

Sec. 2. The President and Vice Presidents shall be elected for a term of one year. The Secretary, Treasurer and Councilors shall be elected for terms of five years each, the Councilors being divided into classes so that two shall be elected each year. All of these officers shall serve until their successors are elected and installed.

Sec. 3. The Officers of the Association shall be elected by the House of Delegates on the morning of the last day of the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councilor, and no person shall be elected to any such office who is not in attendance upon the Annual Session and who has not been a member of the Association for the past two years.

ARTICLE IX.—FUNDS AND EXPENSES.

Funds for meeting the expenses of the Association shall be arranged for by the House of Delegates by an equal per capita assessment upon each county society to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publication. Funds may be appropriated by the House of Delegates to defray the expenses of the Annual Session, for publication, and for such other purposes as will promote the welfare of the Association and profession.

ARTICLE X.—REFERENDUM.

The General Meeting of the Association may, by a two-thirds vote, order a general referendum upon any question pending before the House of Delegates, and the House of Delegates may, by a similar vote of its own members, or after a like vote of the General Meeting, submit any such question to the membership of the Association for a final vote; and if the persons voting shall comprise a majority of all the members, a majority of such vote shall determine the question and be binding upon the House of Delegates.

ARTICLE XI.—THE SEAL.

The Association shall have a common Seal with power to break, change or renew the same at pleasure.

ARTICLE XII.—AMENDMENTS.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session and that it shall have been sent officially to each component county society at least two months before the session at which final action is to be taken.

BY-LAWS.

CHAPTER I.—MEMBERSHIP.

Section 1. All members of the Component County Societies shall be privileged to attend all meetings and take part in all of the proceedings of the Annual Session, and shall be eligible to any office within the gift of the Association. PROVIDED, that no physician may become a member of any county society unless he signs and keeps inviolate the following pledge:

I hereby promise upon my honor as a gentleman that I will not so long as I am a member of the Kentucky State Medical Association practice division of fees in any form; neither by collecting fees from others referring patients to me nor by permitting them to collect my fees for me; nor will I make joint fees with physicians or surgeons referring patients to me for operation or consultation; neither will I in any way, directly or indirectly, compensate anyone referring patients to me nor will I utilize any man as an assistant as a subterfuge for this purpose.

Sec. 2. The name of a physician upon the properly certified roster of members, or list of delegates, of a chartered county society which has paid its annual assessment, shall be *prima facie* evidence of his right to register at the annual session in the respective bodies of this Association.

Sec. 3. No person who is under sentence of suspension or expulsion from any component society of this Association, or whose name has

been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings, until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of the society, he shall receive a badge which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an annual session until he has complied with the provisions of this section.

CHAPTER II.—ANNUAL AND SPECIAL SESSIONS OF THE ASSOCIATION.

Section 1. The Association shall hold an annual session, meeting every third year in the city of Louisville, and the other two years at some point in the State fixed at the preceding annual session.

Sec. 2. Special sessions of either the Association or House of Delegates shall be called by the President at his discretion or upon petition of twenty delegates.

CHAPTER III.—GENERAL MEETING.

Section 1. The General Meeting shall include all registered members, delegates and guests, who shall have equal rights to participate in the proceedings and discussions; and, except guests, to vote on pending questions. Each General Meeting shall be presided over by the President or in his absence or disability, or upon his request, by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President and the annual orations, and the entire time of the Sessions as far as may be shall be devoted to papers and discussions relating to scientific medicine.

Sec. 2. The General Meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same; but any expense in connection therewith must first be approved by the House of Delegates.

Sec. 3. Except by special vote, the order of exercises, papers and discussions as set forth in the official program shall be followed from day to day until it has been completed.

Sec. 4. No address or paper before the Association, except those of the President and Orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject.

Sec. 5. All papers read before the Association shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done it shall not be published.

CHAPTER IV.—HOUSE OF DELEGATES.

Section 1. The House of Delegates shall meet annually at the time and place of the Annual Session of the Association and shall so fix its hours of meeting as not to conflict with the first General Meeting of the Association, or with the meeting held for the address of the President and the annual orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with the duties. But if the business interests of the Association and profession require, it may meet in advance or remain in session after the final adjournment of the General Meeting.

Sec. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every 25 members, and one for each major fraction thereof, but each county society holding a charter from this Association, which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate. In case the regularly elected delegate is unable to attend the annual meeting of the Association, the President of the county society shall have the power to appoint an alternate, who shall have the rights and privileges of a delegate.

Sec. 3. A majority of the registered delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Association.

Sec. 4. It shall, through its officers, Advisory Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each annual session a stepping stone to further ones of higher interest.

Sec. 5. It shall consider and advise as to the material interest of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public-health legislation, and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to pro-

mote friendly intercourse between physicians of the same locality and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate work in medical centers as well as home study and research and shall endeavor to have the results of the same utilized and intelligently discussed in the county societies. With these ends in view, five years after the adoption of the By-Laws no voluntary paper shall be placed upon the annual program or be heard in the Association which has not first been heard in the county society of which the author is a member.

Sec. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By Laws of that body in such a manner that not more than one-half of the delegates shall be elected in any one year.

Sec. 9. It shall upon application provide and issue charters to county societies organized to conform to the spirit of the Constitution and By-Laws.

Sec. 10. In sparsely settled sections it shall have authority to organize the physicians of two or more counties to be designed by hyphenating the names of two or more counties so as to distinguish them from district and other classes of societies and these societies, when organized and chartered shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 11. It may divide the counties of the State into Councilor Districts, and, when the best interests of the Association and profession will be promoted thereby, organize in each district a medical society, to meet midway between the Annual Sessions of the Association, and members of the chartered county societies and one other shall be members in such district societies. When so organized from the Presidents of such district societies shall be chosen the Vice Presidents of this Association, and the Presidents of the county societies of the district shall be the Vice Presidents of such district societies.

Sec. 12. It shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates, and such committees may report to the House of Delegates in person, and may participate in the debate therein.

Sec. 13. It shall approve all memorials and resolutions issued in the name of the Association before the same shall become effective.

Sec. 14. It shall present a summary of its proceedings to the last general meeting of

each annual session, and shall publish the same in the *JOURNAL*.

CHAPTER V.—ELECTION OF OFFICERS.

Section 1. All elections shall be by secret ballot, and a majority of the votes cast shall be necessary to elect, provided, however, that when there are more than two nominees, the nominee receiving the least number of votes on the first ballot shall be dropped and the balloting continue until an election occurs in like manner.

Sec. 2. Any member known to have directly or indirectly solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

Sec. 3. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General Session.

Sec. 4. Nominations for President shall be called for by counties.

CHAPTER VI.—DUTIES OF OFFICERS.

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver an annual address at such time as may be arranged; shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and so far as practicable, shall visit by appointment, the various sections of the State and assist the Councilors in building up the county societies and in making their work more practical and useful.

Sec. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of his death, resignation or removal, the Council shall elect one of the Vice-Presidents to succeed him.

Sec. 3. The Treasurer shall give bond for the trust imposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Association, together with the bequests and donations. He shall, under the direction of the House of Delegates, sell or lease any estate belonging to the Association, and execute the necessary papers; and shall, in general, subject to such direction, have the care and management of the fiscal affairs of the Association. He shall pay money out of the Treasury, only on a written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of funds in his hands.

Sec. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend all meetings of the Association and of the House of Delegates and he shall keep minutes of their respective proceedings in separate record books. He shall charge upon his books the assessments against each component county society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer and shall keep account of and promptly turn over to the Treasurer all funds of the Association which come into his hands. He shall provide for the registration of the members and delegates at the Annual Sessions. He shall keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society, and upon request shall transmit a copy of this list to the American Medical Association for publication. In so far as it is in his power he shall use the printed matter, correspondence and influence of his office to aid the Councilors in the organization and improvement of the county societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall act as secretary of the Committee on Scientific Work. He shall be editor of the *KENTUCKY MEDICAL JOURNAL*. He shall employ such assistants as may be ordered by the Council or the House of Delegates. He shall annually make a report of his doings to the House of Delegates.

In order that the Secretary may be enabled to give that amount of time to his duties which will permit of his becoming proficient it is desirable that he shall receive some compensation. The amount of his salary shall be fixed by the House of Delegates.

CHAPTER VII.—COUNCIL.

Section 1. The Council shall hold daily meetings during the annual session of the Association and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the annual session of the Association for re-organization and for the outlining of the work for the ensuing year. At this meeting it shall elect a Chairman and Secretary and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such times as may be provided, which report shall include an audit of the accounts of the Secretary and Treasurer and other agents of this

Association, and shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association or under its control, with such suggestions as it may deem necessary. In the event of a vacancy in any office the Council may fill the same until the next annual election.

Sec. 2. Each Councilor shall be organizer, peacemaker and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his doings, and of the condition of the profession of each county in his district to each annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates upon a proper itemized statement, but this shall not be construed to include his expense in attending the annual session of the Association.

Sec. 3. Collectively the Council shall be the Board of Censors of the Association. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or to this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a county society, upon which an appeal is taken from the decision of an individual Councilor. Its decision in all such cases shall be final.

Sec. 4. The Council shall have the right to communicate the views of the profession and of the Association in regard to health, sanitation and other important matters to the public and the lay press. Such communications shall be officially signed by the chairman and secretary of the Council, as such.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have authority to appoint such assistants to the editor as it deems necessary. It shall manage and conduct the KENTUCKY MEDICAL JOURNAL, which is the organ of the Association, and all money received by the JOURNAL, the Council or any officer of the Association, shall be paid to the Treasurer of the Association on the first of each month.

Sec. 6. All reports on scientific subjects and all scientific discussions and papers heard before the Association shall be referred to

the KENTUCKY MEDICAL JOURNAL for publication. The editor, with the consent of the Councilor for the District in which he resides may curtail or abstract papers or discussions, and the Council may return any paper to its author which it may not consider suitable for publication.

Sec. 7. All commercial exhibits during the annual session shall be within the control and direction of the Council.

CHAPTER VIII.—COMMITTEES

Section 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Medical Education.

A Medico-Legal Committee.

A Committee on Arrangements, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members of which the President-elect shall be a member and Chairman, and the Secretary shall be a member and Secretary, and shall determine the character and scope of the scientific proceedings of the Association, subject to the provisions or the instructions of the House of Delegates or of the Association, or to the provisions of the Constitution and By-Laws. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented, which shall be adhered to by the Association as nearly as practicable.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Association in securing the enforcing legislation in the interest of the public health and scientific medicine. It shall keep in touch with the professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence in local, state and national affairs and elections. Its work shall be done with dignity becoming a great profession and with that wisdom which will make effective its work and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such times as may be arranged during the annual session.

Sec. 4. The Committee on Arrangements shall consist of the component society in the territory in which the annual session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meeting-places of the Association and of

the House of Delegates, and of their respective committees, and shall have general charge of all arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require.

Sec. 5. The Medico-Legal Committee shall consist of three members, one of whom, the Chairman, shall be elected by the Council for five years, and the Secretary and Treasurer shall be the other two members *ex officio*. This committee shall select and fix the compensation for an attorney, who shall act as General Counsel, and, if required, additional local counsel. The Association through this Committee shall defend its members who are in good standing against unjust suits for malpractice.

CHAPTER IX.—ASSESSMENTS AND EXPENDITURES.

Section 1. The assessment of three dollars per capita on the membership of the component societies is hereby made the annual dues of this Association. The Secretary of each county society shall forward its assessment together with its roster of all officers and members, lists of delegates, and list of non-affiliated physicians of the county to the Secretary of this Association on the first day of January in each year.

Sec. 2. Any county society which fails to pay its assessment, or make the report required, on or before the first day of April in each year, shall be held as suspended, and none of its members, or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

Sec. 3. All motions or resolutions appropriating money, shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council and House of Delegates.

CHAPTER X.—RULES OF CONDUCT.

The principles set forth in the Principles of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XI.—RULES OF ORDER.

The deliberations of this Association shall be governed by parliamentary usage as contained in Robert's Rules of Order, unless otherwise determined by a vote of its respective bodies.

CHAPTER XII.—COUNTY SOCIETIES.

Section 1. All county societies now in affiliation with the State Association or those that may hereafter be organized in this State,

which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, upon application to the House of Delegates, receive a charter from and become a component part of this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the House of Delegates and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any component county society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the District if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. Each county society shall judge of the qualification of its own members, but, as such societies are the only portals to this Association, every reputable and legally registered physician who is practicing, or who will agree to practice, non-sectarian medicine shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every such physician in the county to become a member.

Sec. 6. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council, which, upon a majority, may permit him to become a member of an adjacent county society.

Sec. 7. In hearing appeals the Council may admit oral or written evidence as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. When a member in good standing in a component society moves to another county in this State, his name, upon request shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

Sec. 9. A physician living on or near a county line may hold membership in that county most convenient for him to attend, on

permission of the society in whose jurisdiction he resides.

Sec. 10. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material conditions of every physician in the county; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. Frequent meetings shall be encouraged, and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work, and to give the society the first benefit of such labors. Official position and other preferences shall be unstintingly given to such members.

Sec. 12. At the time for the annual election of officers each county society shall elect a delegate or delegates to represent it in the House of Delegates of this Association in the proportion of one delegate to each twenty-five members or major fraction thereof, and the secretary of the society shall send a list of such delegates to the Secretary of this Association at least sixty days before the annual session.

Sec. 13. The Secretary of each county society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose, to the Secretary of this Association, on the first day of January of each year, or as soon thereafter as possible, and at the same time that the dues accruing from the annual assessment are set in. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

Sec. 14. The Secretary of each county society shall report to the KENTUCKY MEDICAL JOURNAL full minutes of each meeting and forward to it all scientific papers and discussions which the Society shall consider worthy of publication.

CHAPTER XIII.—AMENDMENTS.

These By-Laws may be amended by any annual session by a two-thirds vote of all the delegates present at that session, after the

amendment has laid upon the table for one day.

REPORT OF THE COUNCIL.

To the House of Delegates:

In accordance with the provisions and constitution of the By-Laws, we have the honor of submitting this, our annual report:

The membership remains about the same as last year. It has increased in the first, second, third, sixth and tenth districts and has remained stationary in the ninth. From year to year we have called the attention of the profession to the fact that the roll is not exactly accurate as to our membership. We constantly regret that a considerable number of our physicians let their membership lapse, do not receive the JOURNAL, are not protected against unjust malpractice suits; in fact, do not get any of the benefits of the state organization, and form the majority of the dissatisfied element which is probably a necessary part of every successful organization. The Council still believes it would be better for the Association if such men could be dropped from membership entirely and required to earn their way back into our fold by efficient work. There are less than four hundred men in actual practice in the state who are not connected with our organization. Such men should be informed that they are not eligible for reciprocity with the states with which Kentucky has established reciprocal relations. No state wants doctors who are "slackers" in medical society work. It is a matter of regret that Kentucky has to keep them.

Our county societies are doing actual work. Of course this does not apply to all of them and probably never will, but the large majority are of real value to their members. It is of interest that the work of the county society is actually reflected in the Vital Statistics Reports. As the organization becomes more effective in the county, there is a decrease in deaths from tuberculosis, typhoid fever and other preventable diseases. This is, of course, directly due to the increased knowledge of the medical profession, and through them, of the people whom they serve. If this could be realized in the counties which are not yet holding effective meetings, we are confident they would be immediately properly reorganized. The men who do not regularly attend society meetings fail to realize what may be gained by the attrition of mind against mind and the opportunity of helpfulness that comes from doing real things and real work together.

During the current year the country finds itself at war with probably the greatest war power the world has yet known. As little as the people generally realize it, well informed physicians understand that this war will be

won or lost by the medical profession of America. The great Surgeon General of our Army, Dr. W. C. Gorgas, the real hero who was behind the clean-up of Cuba and the construction of the Panama Canal, has estimated that it will require 24,000 physicians *immediately* to properly safe-guard the health and lives of the American soldiers. This demand is going to mean real sacrifice on the part of thousands of doctors. Of course there are hundreds who could go with the army and secure larger incomes than they are making at home, but the army no more desires this unsuccessful and unqualified class than do the people at home. In England, practice has already been socialized to such an extent that about one physician is left for each 5,000 population in the cities and one for each 3,000 in the country. Naturally, this means great hardship, both to the members of the profession who are left at home and to the people whom they serve, but war means hardship, and if America is to successfully wage this war, all of its people will have to learn first or last that a very great deal of hardship is to come to each of them.

It is of interest that there are only 600 physicians in Kentucky under 35 years of age. There are about 2,000 between the ages of 35 and 55, and about 800 over 55. If a fourth of the active profession under 55 is called into service, it will mean we will have to furnish about 740 men from Kentucky. At the time this report is written about 324 have been commissioned and have accepted their commission. In many counties of the State a large proportion of the profession have applied for commissions, while in others, practically none have responded to the call. We have requested the Secretary to make a definite and complete report as to the number who have been commissioned in each county in the State so that the profession may be fully acquainted with the situation. We urgently and emphatically recommend to the House of Delegates that it either arrange for such a voluntary response to the call for medical men as will place Kentucky in the first rank, or that it urge upon the Surgeon General and the Congress a selective draft which will properly provide the necessary physicians for the army and at the same time will safe guard the health and lives of the 98 per cent of our population who will be left at home.

We are happy to report that the net profit for the JOURNAL for the current year was \$779.58. We feel particularly gratified at being able to report a profit at all this year because of the largely increased cost of paper. However, our printers forewarned us about this advance and we purchased a year's supply for which we paid \$1194.67 and we still have a balance of this on hand. We are very much gratified, with the assistance of the

Jefferson County Medical Society, under the very able management of Dr. E. F. Horine, that we have been able to add sixteen pages to each issue of the JOURNAL, which will be given to the full proceedings of that society. We feel that this is of special importance to the profession both of Louisville and to the State for obvious reasons.

The Treasurer reports a net balance of \$6,498.55 this year as against \$5,407.79 last year. The total assets of the Association on September 1st, 1917 are \$8,514.01 as against \$8,500.25 last year. The Council has purchased a \$1,000.00 Liberty Bond but this has not yet been delivered nor paid for.

The effective work of the Medico-Legal Committee has been continued during the year. The expense of this Committee for the year has been \$2,607.82, an increase over former years, but taking this work as a whole since the organization of the Committee, it has been self-sustaining. Dr. Moren's detailed report will be found of great interest and it is of such importance that it should be read by every member of the Association. It is to be regretted that his reports cannot be heard by every member. If his advice could be accepted by all of them, there would be no malpractice suits in Kentucky. It is to be remembered that malpractice suits must be brought within a year and the Council urges that the Association refuse to defend any counter-suit where a physician sues upon fee bill within the time limit. It is also of importance that our members keep constantly in mind that almost all of the malpractice suits have been brought against successful general practitioners. The Council cordially commends the activity, wisdom and general effectiveness which has been shown by our Medico-Legal Committee and our General Counsel, Hon. Fred Forcht, in the conduct of the important matters coming under their jurisdiction.

We have had the reports of the Secretary and Treasurer audited by Mr. B. P. Eubanks, Public Accountant, and submit his report herewith.

It will be noted again this year, as for the past eight years, that each item of expense and income are set forth so plainly, that not only every county society and its Delegates, but every member of the Association may know the details of our business affairs which are of interest and importance to every one of us. The Council and your officers will continue to work with the most careful attention to its every detail. It is to be remembered at all times that we are entirely under the control and direction of the members of the county societies through their duly elected delegates. If anything is being done wrong, if there is any way of improving it, if newer methods or better management will more

nearly accomplish the purpose of this Association, we beg that it be submitted to the House of Delegates for its action at this session so that in the future conduct of the affairs of this Association we may best promote the purpose set forth in its Constitution and charter "to federate and bring into one compact organization the entire medical profession of the State of Kentucky, and to unite with similar associations in other states to form the American Medical Association with a view to the extension of medical knowledge, and to the advancement of medical science; to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interests; and to the enlightenment and direction of public opinion in regard to the great problems of state medicine so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of diseases, and in prolonging and adding comfort to life."

Respectfully submitted,

R. C. McCHORD, Chairman.

AUDITOR'S REPORT.

To the Council of the Kentucky State Medical Association:

GENTLEMEN:

At your request I have audited the books of your Treasurer, Dr. W. B. McClure, and your Secretary, Dr. A. T. McCormack, from September 1, 1916 to September 1, 1917, and beg to submit the following report:

CASH INVENTORY

Cash balance in Second National Bank, Lexington, Kentucky, to the credit of W. B. McClure, Treasurer	\$7,588 19
Less outstanding vouchers, viz:	
No. 329—T. W. Singer, Chicago.....	\$ 6 00
No. 377—A. T. McCormack	134 50
No. 378—L. H. South	40 00
No. 379—Clyde W. Howell	75 00
No. 380—Globe-Wernicke Co.	3 42
No. 381—Kelly Kash, Attorney	43 40
No. 382—Dr. Leslie Brand	243 25
No. 383—Dr. Peyton Ligon	76 15
No. 385—Times-Journal Pub. Co.....	202 90
No. 386—A. T. McCormack	125 00
No. 387—Dr. L. H. South	40 00
No. 388—Clyde W. Howell	75 00
No. 389—W. C. Morris, Postmaster..	25 00
	1,089 64

Net Cash Balance agreeing with Secretary.....\$6,498 55
Mortgage Bond C. B. Dobson 6%.....1,000 00

Office Furniture, etc (See exhibit "D")\$7,498 55
1,015 46

I have carefully compared every item and checked same from every angle and find same correct and the books in balance and neatly kept.

A full history of the year's work is shown in detail and summary in the following exhibits, which have been checked and proved.

Very truly,
B. P. EUBANK, Auditor.

EXHIBIT "A"

RECEIPTS AND DISBURSEMENTS

Dues from County Societies and Subscriptions to JOURNAL	\$6,236 75	
Income of JOURNAL (Adv. etc.)....	5,240 68	11,477 43
Investments paid (E. H. Adams Bond).....		1,000 00
Voucher Check No. 90 in favor of Sampson & Sampson, not used		15 00
Interest from Investments, viz:		
Interest on Adams Bond.....	\$ 73 50	
12 mos. Interest on Dobson Bond	60 00	
15 mos. Int. on Time Deposit.....	56 25	189 75
Total Receipts		\$12,682 18
Bal on hand September 1, 1916 as reported....		5,407 79
Total		\$18,089 97

DISBURSEMENTS

STATE MEDICAL ASSOCIATION:		
Secretary's Salary	\$1,500 00	
Secretary's Stenographer	900 00	
Secretary's Sundries	31 75	
Secretary's Printing	61 30	
Treasurer's Office Expense and Bond	35 00	
Officers, Council and Committee Expenses	224 05	
Attorney's Fees — Medico-Legal Committee	1,725 00	
Costs and Expenses—Medico-Legal Committee	882 82	
Association Sundries	102 72	
Expenses—Hopkinsville Meeting..	959 18	
Stamps and Envelopes	226 77	6,648 59
KENTUCKY MEDICAL JOURNAL:		
Business Manager's Salary	\$ 480 00	
Printing JOURNAL	2,792 46	
Postage on JOURNAL	150 00	
JOURNAL Sundries	281 34	
Paper purchased for JOURNAL printing	1,194 67	
Freight and Hauling	1 73	
Commission on advertisements ..	42 63	4,942 83
		\$11,591 42
Balance in Treasury September 1, 1917.....		\$ 6,498 55
Total		\$18,089 97

The Final Payment.—The fifth and final payment, or thirty per centum, on Liberty Loan Bonds purchased on installments is due on August 30th. According to the official statement of terms and conditions of the sale the Liberty Loan Bonds issued by Secretary of the Treasury McAdoo at the time subscription to the bonds was invited the payments must be made on or before that date.

Whether the Liberty Bonds were purchased from the Treasury or from the Federal Reserve Banks or through other banks or agencies it is important that this installment be paid promptly.

Tuberculin Therapy.—J. A. M. Ladron de Guevara (La Cronica medica, March 25, 1917) gives the indications for tuberculin therapy as follows: recent onset with slight involvement, general good condition, and normal temperature; latent or larval forms; slowly advancing cases of bilateral disease which have improved under general hygienic treatment; chronic fibrocaceous phthisis. Contraindications are acute cases; extensive involvement with poor general condition; cases with multiple visceral foci; tachycardia above 120; mixed infections; high fever; and cardiac lesions.

EXHIBIT "B."

Detailed Statement of Disbursement of W. B. McClure, Treasurer, Kentucky State Medical Association, each made on a Voucher (check signed by Dr. Milton Board, President, and A. T. McCormack, Secretary, and himself, from September 1, 1916 to September 1, 1917

October 1.	VOUCHER CHECK No. 249.....	\$20 00	
	DR. HUGH C. McKENNA, Chicago (check made to florist)		
	To floral design for Dr. John B. Murphy, deceased.		
September 1.	VOUCHER CHECK No. 250.....	\$153 96	
	W. C. MORRIS, Postmaster.		
	To 5000 No. 5 stamped envelopes and 2000 No. 8 stamped envelopes	\$128 96	
	To amount deposited for postage on JOURNAL.....	25 00	
September 1.	VOUCHER CHECK No. 251.....	\$6 00	
	CENTRAL PRESS CLIPPING SERVICE, Indianapolis.		
	To clipping service for July and August.		
September 1.	VOUCHER CHECK No. 252.....	\$412 80	
	TIMES-JOURNAL PUBLISHING CO.		
	To 3000 24-lb linen letter heads	\$ 11 20	
	To 1000 floor plans State Meeting	5 50	
	To 1000 exhibitors circulars	5 00	
	To 500 application blanks	4 75	
	To 500 envelopes for Dr. Shirley	1 75	
	To express on same	30	
	To 500 JOURNAL letter heads	2 75	
	To 3500 September 1st 96-page JOURNALS	360 00	
	By 18 errors in same		4 50
	To setting tabular matter	18 95	
	To envelopes	3 50	
	To 18 changes	3 60	
		\$417 30	
	Less	4 50	
October 1.	VOUCHER CHECK No. 253.....	\$127 89	
	DR. A. T. McCORMACK, Bowling Green.		
	To salary as Secretary for September	\$125 00	
	To telegrams K. S. M. A.	2 89	
October 1.	VOUCHER CHECK No. 254.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green.		
	To salary as Business Manager of JOURNAL.		
October 1.	VOUCHER CHECK No. 255.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green.		
	To salary for September as Stenographer.		
October 1.	VOUCHER CHECK No. 256.....	\$150 00	
	HON FRED FOCHT, JR., Louisville.		
	To services rendered from Jan. 1 to July 1, 1916 as attorney for Kentucky State Medical Association.		
October 1.	VOUCHER CHECK No. 257.....	\$5 00	
	KENTUCKY CONFERENCE OF CHARITIES AND CORRECTIONS, Louisville.		
	To contribution.		
October 1.	VOUCHER CHECK No. 258.....	\$6 00	
	AMERICAN MEDICAL ASSOCIATION, Chicago.		
	To 1 copy "Biggest of the Case Law" sent to Hon. John Rodas, Bowling Green.		
October 1.	VOUCHER CHECK No. 259.....	\$42 63	
	MESSRS. W. J. & J. G. DENHARDT, Bowling Green.		
	To 25% commission on new advertisements \$ 89 64.....	\$22 41	
	To 15% commission on renewals 134 80.....	20 22	
	(This includes Jefferson County ads., Vanderbilt and Cumberland Tel. & Tel. Co.)		
October 1.	VOUCHER CHECK No. 260.....	\$252 25	
	TIMES-JOURNAL PUBLISHING CO.		
	To 2500 80-page October 1st JOURNALS.....	\$250 00	
	By 25 errors in same		6 25
	To 2500 envelopes	2 50	
	To 20 changes	6 00	
		\$258 50	
)Less	6 25	
November 1.	VOUCHER CHECK No. 261.....	\$196 50	
	S. W. BASSETT COMPANY, Providence, R. I.		
	To 500 gold buttons at .26 each	\$130 00	
	To 350 bars and bangles (Hopkinsville Meeting)	66 50	
	Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 262.....	\$25 00	
	B. P. EUBANK, Bowling Green.		
	To auditing books and accounts of Secretary and Treasurer from September 1, 1915 to September 1, 1916, and reporting same.		
	Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 263.....	\$15 50	
	DR. CHAS. W. HIBBITT, Louisville.		
	To expenses for 1916 as Councilor for Sixth District.		
	Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 264.....	\$14 20	
	DR. R. C. McCHORD, Lebanon.		
	To expenses for 1916 as Councilor for Sixth District.		
	Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 265.....	\$17 00	
	DR. A. W. CAIN, Somerset.		
	To expenses for 1916 as Councilor for Seventh District		
	Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 266.....	\$17 85	
	DR. J. S. LOCK, Barbourville.		
	To expenses as Councilor for Eleventh District.		
	Approved by Council and ordered paid by House of Delegates.		

November 1.	VOUCHER CHECK No. 267.....	\$26 00
DR.	W. B. McCLOURE, Lexington. To expenses incident to Hopkinsville meeting. Approved by Council and ordered paid by House of Delegates.	
November 1.	VOUCHER CHECK No. 268.....	\$47 50
DR.	C. C. BASS, New Orleans, La. To expenses to and from Hopkinsville, September 24, 1916. (Illustrated lecture Wednesday evening Public Session). Approved by Council and ordered paid by House of Delegates.	
November 1.	VOUCHER CHECK No. 296.....	\$11 00
DR.	W. L. HEIZER, Bowling Green. To trip to Hopkinsville, getting up floor plan for exhibitors	10 00
	To Meals	1 00
	Approved by Council and ordered paid by House of Delegates.	
November 1.	VOUCHER CHECK No. 270.....	\$98 00
DR.	J. N. McCORMACK, Bowling Green. To expenses self and witnesses, Anderson case at Somerset. To copying depositions	\$ 3 75
	Cash to Dr. Zerkle	12 00
	Cash to Dr. Featherly	8 50
	Cash Shadoan, printing	4 00
	Cash to Prof. Kerrick	1 75
	Cash to McNutt.....	12 00
	Cash for Mr. Rose's expenses	7 60
	Cash to Mr. Sulte	7 50
	Clerk's fee at Kingston	4 00
	Prof. Kerrick's per diem and expenses	18 00
	R. R. fare Rockwood, Tenn., Oct 27 and 28th.	12 40
	Sleeper \$2.00, hotel 1 1-2 days \$3.50, cab \$1.00	6 50
November 1.	VOUCHER CHECK No. 271.....	\$100 00
G. L. CAMPBELL, Hopkinsville, (Treasurer). To rent of First Christian Church for annual meeting, October 24th to 27th, 1916, inclusive (4 days). Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 272.....	\$12 50
AMERICAN SURETY COMPANY OF NEW YORK. To premium on bond, W. B. McClure, Treasurer of Kentucky State Medical Association, from October 15, 1916 to October 15, 1917.		
November 1.	VOUCHER CHECK No. 273.....	\$6 00
CENTRAL PRESS CLIPPING SERVICE, Indianapolis. To clipping service for September and October.		
November 1.	VOUCHER CHECK No. 274.....	\$6 68
CAPITOL ENGRAVING COMPANY, Nashville. To 4 halftones (Dr. Pope's article) for JOURNAL	\$ 6 60	
	To postage	08
November 1.	VOUCHER CHECK No. 275.....	\$92 20
MESSRS. CROSSLAND & WASHBURN, Attorneys, Paducah. To defendant's cost in case of M. L. Farmer vs. B. A. Washburn: Fee circuit clerk	\$ 4 60	
	Sheriff's fee	1 50
	Sheriff's fee in Calloway County	25
	Attorney's fee	2 50
	(Case dismissed May 25, 1916). To defendant's cost (same case): J. A. Miller, clerk	\$ 3 83
	Sheriff Allen's fee.....	1 50
	Sheriff in Calloway County.....	50
	Attorney's fee	2 50
	To legal services rendered in actions of M. L. Farmer vs. Dr. B. A. Washburn (2 cases) McCracken Circuit Court.....	75 00
November 1.	VOUCHER CHECK No. 276.....	\$100 00
N. POWELL TAYLOR, Attorney, Henderson. To attorney's fee in case of Amos Allen vs. Dr. Peyton Ligon.		
November 1.	VOUCHER CHECK No. 277.....	\$37 05
MAYME SULLIVAN, Bowling Green. To meals enroute to Hopkinsville	\$ 90	
	Baggage \$2.85, freight 50c	3 35
	Wiring and fixtures	2 80
	Janitor service	5 00
	Honorarium at Hopkinsville	25 00
	Approved by Council and ordered paid by House of Delegates.	
November 1.	VOUCHER CHECK No. 278.....	\$76 50
CLYDE W. HOWELL, Bowling Green. To meals enroute to Hopkinsville	\$ 75	
	To cab 25c, baggage 25c, service 25c	75
	To October salary as stenographer	75 00
	Approved by Council and ordered paid by House of Delegates.	
November 1.	VOUCHER CHECK No. 279.....	\$131 05
DR. A. T. McCORMACK, Bowling Green. To October salary as Secretary	\$125 00	
	To expenses incident to Hopkinsville meeting.....	6 05
	Approved by Council and ordered paid by House of Delegates.	
November 1.	VOUCHER CHECK No. 280.....	\$6 00
S. M. HASKINS, Bowling Green. To guard at night for exhibits Hopkinsville meeting. Approved by Council and ordered paid by House of Delegates.		
November 1.	VOUCHER CHECK No. 281.....	\$40 50
DR. L. H. SOUTH, Bowling Green To October salary as Business Manager of JOURNAL	\$40 00	
	To expenses Hopkinsville meeting	50
	Approved by Council and ordered paid by House of Delegates.	

November 1.	VOUCHER CHECK No. 282.....	\$43 70
	HOTEL LATHAM, Hopkinsville.....	
	To hotel and meals Dr. A. T. McCormack.....	\$12 50
	To hotel and meals Dr. Bloodgood.....	2 50
	To hotel and meals Dr. L. H. South.....	10 00
	To hotel and meals Miss Sullivan.....	9 50
	To hotel and meals Margaret Roemer.....	9 50
	Approved by Council and ordered paid by House of Delegates.....	
November 1.	VOUCHER CHECK No. 293.....	\$52 00
	DRS. RICHMOND & McMORRIES, Clinton.....	
	To clerk's fee—John M. Kemp.....	\$13 25
	Sheriff's fee—J. O. Evans.....	6 75
	Stenographer.....	20 00
	Defendant's witnesses.....	12 00
November 1.—	VOUCHER CHECK No. 284.....	\$15 00
	KEACH FURNITURE COMPANY, Hopkinsville.....	
	To darkening shades for main Auditorium of Church.....	
	1 projecting screen 10 by 12.....	
	Approved by Council and ordered paid by House of Delegates.....	
November 1.	VOUCHER CHECK No. 285.....	\$4 00
	BAUGH ELECTRIC COMPANY, Hopkinsville.....	
	To portable lamp for Hopkinsville meeting.....	
November 1.	VOUCHER CHECK No. 286.....	\$100 00
	A. A. SKEEN, Attorney, Clintwood, Virginia.....	
	To attorney's fee in case of Jas. Sifers vs. Dr. P. C. Sanders, Praise, Ky.....	
November 1.	VOUCHER CHECK No. 287.....	\$279 00
	TIMES JOURNAL PUBLISHING CO.....	
	To express.....	\$ 40
	To Officers Badges, postage.....	2 60
	To 2300 4-page folders.....	7 00
	To 100 12-page programs for annual meeting.....	16 50
	To 2500 80-page November 1st JOURNALS.....	250 00
	To 2500 envelopes.....	2 50
	Approved by Council and ordered paid by House of Delegates.....	
November 1.	VOUCHER CHECK No. 288.....	\$150 00
	DR. JOHN J. MOREN, Louisville.....	
	To expenses for 1916 Medico-Legal Committee.....	
December 1.	VOUCHER CHECK No. 289.....	\$150 00
	DR. A. T. McCORMACK, Bowling Green.....	
	To salary for November as Secretary.....	\$125 00
	To postage advanced on JOURNAL.....	25 00
December 1.	VOUCHER CHECK No. 290.....	\$40 00
	DR. L. H. SOUTH, Bowling Green.....	
	To November salary as Business Manager.....	
December 1.	VOUCHER CHECK No. 291.....	\$75 00
	CLYDE W. HOWELL, Bowling Green.....	
	To November salary as Stenographer.....	
December 1.	VOUCHER CHECK No. 292.....	\$865 91
	TIMES JOURNAL PUBLISHING CO.....	
	To 218 reams 22 by 32 by 35 Spartan Super-Flat framed per cwt., \$9.87.....	\$725 54
	Freight on same.....	27 54
		\$753 08
	By 3% discount on \$725 54.....	21 77
		\$721 31
	To 14 reams 22 by 32 by 35 Sparten Super.....	134 60
	Approved by Council and ordered paid by House of Delegates.....	
December 1.	VOUCHER CHECK No. 293.....	\$72 75
	DR. MILTON BOARD, Louisville.....	
	To expenses—trips to Frankfort, Committee on Health and Public Policy.....	
	Approved by Council and ordered paid by House of Delegates.....	
December 1.	VOUCHER CHECK No. 294.....	\$100 00
	HON. FRED FORCHT, JR., Louisville.....	
	To attorney's fee—case of Alice H. Huebsch vs Drs. O. B. Haack and C. G. Forsee.....	
December 1.	VOUCHER CHECK No. 295.....	\$5 00
	GRAHAM & LONGSTREET, Stenographers, Louisville.....	
	To report of witnesses for defendants, case of Alice H. Huebsch vs. Drs. Haack and Forsee.....	
December 1.	VOUCHER CHECK No. 296.....	\$7 85
	J. F. AVERY, Louisville.....	
	To fee taking depositions of Alice H. Huebsch, 19 pages.....	\$ 7 60
	To service of subpoena.....	25
	Case Alice H. Huebsch vs. Drs. Haack and Forsee.....	
December 1.	VOUCHER CHECK No. 297.....	\$14 50
	DR. I. A. SHIRLEY, Winchester.....	
	To expenses for 1916 as Councilor Tenth District.....	
December 1.	VOUCHER CHECK No. 298.....	\$1 82
	CAPITOL ENGRAVING COMPANY, Nashville.....	
	To 1 half-tone \$1 76, postage .06.....	
December 1.	VOUCHER CHECK No. 299.....	\$8 50
	UNIVERSITY BOOK STORE, Lexington.....	
	To 750 letter heads for Dr. McClure (Oct 9).....	
December 1.	VOUCHER CHECK No. 300.....	\$46 50
	COURIER-JOURNAL JOB PRINTING CO., Louisville.....	
	To 5300 membership cards litho 2 col, 1917-1918.....	
December 1.	VOUCHER CHECK No. 301.....	\$37 40
	DR. O. C. ROBERTSON, Owensboro.....	
	To bal on expenses Chiropractic trial.....	
December 1.	VOUCHER CHECK No. 302.....	\$40 00
	DR. W. AUBREY POOLE, Henderson.....	
	To expenses to Chicago, meeting of Council on Medical Education and Health and Public Instruction, and the Federation of State Medical Boards of U. S. February 7th and 8th.....	

Feb. 6—Pullman to Chicago, \$9.55; Dinner Evansville, \$1.30	\$10 85
Feb. 7—Room Hotel, \$3.00; 3 meals, \$3.00; Hotel, \$3.00	9 00
Feb. 8—3 meals, \$3.00; (9) Pullman from Chicago, \$9.55	12 55
Feb. 9—Breakfast Evansville, \$1.00; 4 days' time, \$6.60	7 60

Approved by Council and ordered paid by House of Delegates.

December 1. VOUCHER CHECK No. 303.		\$264 19
TIMES-JOURNAL PUBLISHING CO.		
To 2500 96-page December JOURNALS	\$249 09	
To 2500 envelopes	2 50	
To difference setting 6 point 21,500 ems.	8 60	
To 9000 ems killed	3 60	
To 27 changes	5 40	
By 20 errors in JOURNAL		5 00
	\$269 19	
	Less errors	5 00
		\$264 19
(Used 30 3-5 reams 35 lb to ream or 1071 lbs at \$9.97 less 3%.)		
December 1. VOUCHER CHECK No. 304.		\$4 00
AMERICAN NATIONAL BANK, Bowling Green.		
To check returned from Dr. C. H. Hurst (Breathitt County) "insufficient funds in bank."		
December 1. VOUCHER CHECK No. 305.		\$38 10
BOWLING GREEN MESSENGER, Bowling Green.		
To 7000 letter heads—6 changes	\$28 00	
To 2500 envelopes—5 changes	9 35	
Parcel post	75	
January 1. VOUCHER CHECK No. 306.		\$328 76
TIMES-JOURNAL PUBLISHING CO.		
To 98 reams 22 by 22 by 38 Spartan Super 3430 lbs., per cwt. \$9.87	\$326 03	
Freight on same	12 51	
	\$338 54	
By 3% discount on \$326.03		9 78
Approved by Council and ordered paid by House of Delegates.		
January 1. VOUCHER CHECK No. 307.		\$150 00
DR. A. T. McCORMACK, Bowling Green.		
To December salary as Secretary	\$125 00	
To postage advanced on JOURNAL	25 00	
January 1. VOUCHER CHECK No. 308.		\$40 00
DR. L. H. SOUTH, Bowling Green.		
To December salary as Business Manager.		
January 1. VOUCHER CHECK No. 309.		\$75 00
CLYDE W. HOWELL, Bowling Green.		
To December salary as Stenographer.		
January 1. VOUCHER CHECK No. 310.		\$199 95
TIMES-JOURNAL PUBLISHING CO.		
To 2500 30-page January 1st JOURNALS	\$208 00	
To 21 changes	4 20	
By 49 errors in JOURNAL		12 25
	\$212 20	
	Less errors	12 25
January 1. VOUCHER CHECK No. 311.		\$2 82
CAPITOL ENGRAVING COMPANY, Nashville.		
To 1 half tone	\$ 196	
To 1 zinc etching	80	
To postage	06	
January 1. VOUCHER CHECK No. 312.		\$6 00
CENTRAL PRESS CLIPPING SERVICE, Indianapolis.		
To clipping service for November and December.		
January 1. VOUCHER CHECK No. 313.		\$5 75
H. HESSE, Louisville.		
To 4 full size reproductions of the McDowell letter	\$ 275	
To 2 reduced size reproductions of the McDowell letter	1 00	
To framing original letter	2 00	
January 1. VOUCHER CHECK No. 314.		\$70 70
DR. JOS. C. BLOODGOOD, Baltimore.		
To expenses to Hopkinsville to deliver illustrated lecture on "Cancer".		
Approved by Council and ordered paid by House of Delegates.		
January 1. VOUCHER CHECK No. 315.		\$26 44
DR. EVERETT MORRIS, Oak Forest, Illinois.		
To expenses to Hopkinsville meeting to give paper on "Tuberculosis."		
Approved by Council and ordered paid by House of Delegates.		
January 1. VOUCHER CHECK No. 316.		\$100 00
MESSRS. DORSEY & DORSEY, Henderson.		
To attorney's fee—case of Allen vs. Dr. Ligon.		
January 1. VOUCHER CHECK No. 317.		\$100 00
HON. FRANK V. BENTON, Newport.		
To legal services rendered in cases of Andrei Cocia vs. Dr. W. J. Thomasson.		
January 1. VOUCHER CHECK No. 318.		\$15 95
CIRCUIT CLERK OF CAMPBELL COUNTY, Newport.		
To court costs in case of Andrei Cocchi vs. Dr. Thomasson.		
January 1. VOUCHER CHECK No. 319.		\$150 00
W. O. HAYS, Attorney, Somerset.		
To taking and transcribing record in Anderson case.		
January 1. VOUCHER CHECK No. 320.		\$150 00
HON. FRED FORCHT, JR., Louisville.		
To services rendered from July, 1916 to January, 1917.		
January 1. VOUCHER CHECK No. 321.		\$37 80
A. C. PORTER, Circuit Clerk, Henderson.		
To defendant's cost bill in re B. T. Morris vs. Dr. Oscar Allen—Ohio Circuit Court:		
To clerk's cost	\$17 55	
To jury fee	4 00	
To stenographer	10 00	
To sheriff	6 25	

January 1.	VOUCHER CHECK No. 322.....	\$50 00	
	ERNEST WOODWARD, Attorney, Hartford. To legal services in re. B. T. Morris vs. Dr. Oscar Allen.		
January 1.	VOUCHER CHECK No. 323.....	\$5 00	
	WILLYE SMITH, Official Stenographer, Hartford. To reporting 1 day in case of B. T. Morris vs. Dr. Oscar Allen.		
February 1.	VOUCHER CHECK No. 324.....	\$125 00	
	DR. A. T. McCORMACK, Bowling Green. To January salary as Secretary.		
February 1.	VOUCHER CHECK No. 325.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To January salary as Business Manager.		
February 1.	VOUCHER CHECK No. 326.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To January salary as Stenographer.		
February 1.	VOUCHER CHECK No. 327.....	\$15 80	
	GRIDER, GARDNER & COMPANY, Bowling Green. To premium due on \$1000 policy—expires December 1, 1917.		
February 1.	VOUCHER CHECK No. 328.....	\$324 00	
	WILLIAM WHITFORD, Medical Reporter, Chicago. To reporting 4 days and 2 evenings, Oct. 24-27, 1906\$ 50 00 To transcript meeting House of Delegates, General Meetings, discussions and addresses 1096 folios at 25c 274 00		
	Approved by Council and ordered paid by House of Delegates.		
February 1.	VOUCHER CHECK No. 329.....	\$6 00	
	MR. T. W. SINGER, Chicago. To securing 6 new members as representative of the American Medical As- sociation at \$1.00 each.		
February 1.	VOUCHER CHECK No. 330.....	\$1 25	
	BOOK SHOP BINDRY, Chicago. To binding 1 KENTUCKY MEDICAL JOURNAL file for 1916.		
February 1.	VOUCHER CHECK No. 331.....	\$50 00	
	DR. CARL NORFLETT, Secretary Pulaski County Medical Society. To one-half attorney's fee (Mr. Wesley) as per agreement made with Dr. Cain and Attorney Wesley, Sept. 14, 1916.		
February 1.	VOUCHER CHECK No. 332.....	\$212 75	
	TIMES-JOURNAL PUBLISHING CO. To 2 cuts—half tones Dr. Bass's paper\$ 3 65 To 2500 envelopes 2 50 To 18 changes 3 60 To 2500 80-page JOURNALS 208 00 By 20 errors in JOURNAL 5 00		
		\$217 75	
	Less errors 5 00		
March 1.	VOUCHER CHECK No. 333.....	\$125 00	
	DR. A. T. McCORMACK, Bowling Green. To February salary as Secretary.		
March 1.	VOUCHER CHECK No. 334.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To February salary as Business Manager		
March 1.	VOUCHER CHECK No. 335.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To February salary as Stenographer.		
March 1.	VOUCHER CHECK No. 336.....	\$5 50	
	UNIVERSITY BOOK STORE, Lexington. To 500 envelopes for Dr. McClure, Treasurer. (Jan. 2.)		
March 1.	VOUCHER CHECK No. 337.....	\$6 65	
	DON C. VAN HOOSE, Clerk Johnson County Court, Paintsville. To defendant's cost—case Eli Trusty vs. Dr. G. V. Daniel, in Johnson County Circuit Court, Paintsville, Ky.		
March 1.	VOUCHER CHECK No. 338.....	\$214 19	
	TIMES-JOURNAL PUBLISHING CO. To 2500 80-page February 1st JOURNALS\$207 99 To 2500 envelopes 2 50 To 11 changes 2 20 By 12 errors 3 00 To 100 letter heads for Dr. Moren (Feb. 7)..... 4 50		
		\$217 19	
	Less errors 3 00		
April 1.	VOUCHER CHECK No. 339.....	\$125 00	
	DR. A. T. McCORMACK, Bowling Green. To March salary as Secretary.		
April 1.	VOUCHER CHECK No. 340.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To March salary as Business Manager.		
April 1.	VOUCHER CHECK No. 341.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To March salary as Stenographer.		
April 1.	VOUCHER CHECK No. 342.....	\$24 55	
	DR. J. N. McCORMACK, Bowling Green. To expenses to Somerset Feb. 12th, March 16, 20, and 21, in Anderson cases.		
April 1.	VOUCHER CHECK No. 343.....	\$9 00	
	CENTRAL PRESS CLIPPING SERVICE, Indianapolis. To clipping service for January, February and March, 1917.		
April 1.	VOUCHER CHECK No. 344.....	\$122 81	
	W. C. MORRIS, Postmaster, Bowling Green. To 4000 No. 5's two-cent stamped envelopes\$86 40 To 500 No. 9's two-cent stamped envelopes..... 11 41		
		\$97 81	
	To deposit for postage on JOURNAL 25 00		

April 1.	VOUCHER CHECK No. 345.....	\$75 00	
	MESSRS. FOGG & KIRK, Attorneys, Paintsville. To attorney's fee in case of Elihu Trusty vs. Dr. G. V. Daniel.		
April 1.	VOUCHER CHECK No. 346.....	\$17 00	
	W. C. HAYS, Attorney, Somerset. To taking testimony 1 day	\$ 5 00	
	To transcribing 48 sheets in duplicate	12 00	
	(Anderson investigation.)		
April 1.	VOUCHER CHECK No. 347.....	\$200 00	
	BROWDER & BROWDER, Attorneys, Russellville. To services rendered in defending suit of W. D. Perkins vs. Dr. Curran Pope.		
April 1.	VOUCHER CHECK No. 348.....	\$216 84	
	TIMES-JOURNAL PUBLISHING CO. To 4 cuts and express	\$ 7 75	
	To 2500 April 1st 80-page JOURNALS	207 99	
	To 2500 envelopes	2 50	
	By 20 errors in same		5 00
	To 18 changes	3 60	
		\$221 84	
	Less errors	5 00	
May 1.	VOUCHER CHECK No. 349.....	\$125 00	
	DR. A. T. McCORMACK, Bowling Green. To April salary as Secretary.		
May 1.	VOUCHER CHECK No. 350.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To April salary as Business Manager.		
May 1.	VOUCHER CHECK No. 351.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To for April salary as Stenographer.		
May 1.	VOUCHER CHECK No. 352.....	\$100 00	
	H. C. CLAY, Attorney, Harlan, Kentucky. To services from August 9, 1916 to the present time in case of Ransom Arnold vs. Dr. G. P. Bailey, in the Harlan County Circuit Court.		
May 1.	VOUCHER CHECK No. 353.....	\$3 05	
	To court costs in case of Dr. Curran Pove vs. Perkins in Logan County Circuit Court.		
May 1.	VOUCHER CHECK No. 354.....	\$272 53	
	TIMES-JOURNAL PUBLISHING CO. To 2200 copies May 1st 104-page JOURNALS.....	\$244 83	
	To 2200 envelopes	2 20	
	To 15 changes	3 00	
	To difference in setting tabular matter 6 point type (Used 1330 lbs paper at \$65.70).	22 50	
May 17.	VOUCHER CHECK No. 355.....	\$105 00	
	JUDGE FRANK E. DAUGHTRY, Bardstown. To fee in Anderson case—Pulaski County	\$100 00	
	To railroad fare and expenses	5 00	
June 1.	VOUCHER CHECK No. 356.....	\$125 00	
	DR. A. T. McCORMACK, Bowling Green. To saalry as Secretary.		
June 1.	VOUCHER CHECK No. 357.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To salary as Business Manager for JOURNAL.		
June 1.	VOUCHER CHECK No. 358.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To saalry as Stenographer.		
June 1.	VOUCHER CHECK No. 359.....	\$25 00	
	W. C. MORRIS, Postmaster, Bowling Green. To postage advanced on JOURNALS.		
June 1.	VOUCHER CHECK No. 360.....	\$8 50	
	UNIVERSITY BOOK STORE, Lexington To 500 small envelopes		
	To 100 large envelopes		
	To 200 sheets of paper.		
June 1.	VOUCHER CHECK No. 361.....	\$2 00	
	D. C. BRENNER & COMPANY. To 1 fac simile (Dr. Milton Board).		
June 1.	VOUCHER CHECK No. 362.....	\$5 00	
	DR. J. N. McCORMACK, Bowling Green To fee paid W. F. Burnett, Knoxville, Tenn. In Anderson case.		
June 1.	VOUCHER CHECK No. 363.....	\$3 43	
	CAPITOL ENGRAVING COMPANY, Nashville. To 3 cuts made for JOURNAL	\$ 3 37	
	To postage	06	
June 1.	VOUCHER CHECK No. 364.....	\$75 00	
	HON. FRED FORCHT, JR., Louisville. To one-half fee for services in case of Wigginton vs. Scott.		
June 1.	VOUCHER CHECK No. 365.....	\$15 20	
	FRANK DUGAN, Circuit Court Clerk, Louisville. To one-half court costs in case of Wigginton vs. Dr. Scott.		
June 1.	VOUCHER CHECK No. 366.....	\$239 29	
	TIMES-JOURNAL PUBLISHING CO. To 2 cuts sent Carl Norfleet, Somerset	\$ 4 60	
	To express on same	50	
	To blank record of examination	3 75	
	To blank report of physicians	3 75	
	To 2300 80-page June 1st JOURNALS	240 00	
	By 15 errors in same		3 75
	By 705 lbs. paper used		33 51
	To 2300 envelopes \$2.30; 17 changes \$3.40.....	5 70	
	To folding inserts \$1.25; putting in inserts ..	3 75	
	To 2000 bill heads	4 50	
	To error in charging up May JOURNALS.....	10 00	
		\$276 55	
	Less credits	37 26	

July 1.	VOUCHER CHECK No. 367.....	\$125 00	
	DR. A. T. McCORMACK, Bowling Green. To salary as Secretary.		
July 1.	VOUCHER CHECK No. 368.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To salary as Business Manager of JOURNAL..		
July 1.	VOUCHER CHECK No. 369.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To salary as Stenographer.		
July 1.	VOUCHER CHECK No. 370.....	\$2 25	
	T. P. TAYLOR & COMPANY, Louisville. To 3 copies and prints of photographs for JOURNAL.		
July 1.	VOUCHER CHECK No. 371.....	\$9 00	
	CENTRAL PRESS CLIPPING SERVICE, Indianapolis. To clipping service for April, May and June, 1917.		
July 1.	VOUCHER CHECK No. 372.....	\$50 00	
	HON. FRED FORCHT, JR., Louisville. To attorney's fee in case of Juanita Thompson vs. Dr. Donald K. Clark—preparation for trial and settlement.		
July 1.	VOUCHER CHECK No. 373.....	\$2 70	
	ROGERS & WILHOIT, Stenographers, Lexington. To carbon copy of depositions in case of Abner vs. Lemming, 27 pages at 10c a page.		
July 1.	VOUCHER CHECK No. 374.....	\$3 05	
	FRANK DUGAN, Clerk, Louisville. To defendant's costs—case of Juanita Thompson vs. Dr. Donald K. Clark.		
July 1.	VOUCHER CHECK No. 375.....	\$319 64	
	TIMES-JOURNAL PUBLISHING CO. To 3 crayons and 13 oval cuts for historical number of JOURNAL.....	\$ 74 79	
	Express on same	53	
	To 2300 July 1st 96-page JOURNALS	243 42	
	By 28 errors in same		7 00
	To 2300 envelopes	2 30	
	To 28 changes	5 60	
		<u>\$326 64</u>	
	Less errors	7 00	
July 17.	VOUCHER CHECK No. 376.....	\$22 25	
	EVELYN GARDNER, Bowling Green. To expenses to Paducah as Assistant Secretary for Registration Board.		
August 1.	VOUCHER CHECK No. 377.....	\$134 50	
	DR. A. T. McCORMACK, Bowling Green. To salary as Secretary	\$125 00	
	To expenses to Paducah June 13-14	9 50	
August 1.	VOUCHER CHECK No. 378.....	\$40 00	
	DR. L. H. SOUTH, Bowling Green. To salary as Business Manager.		
August 1.	VOUCHER CHECK No. 379.....	\$75 00	
	CLYDE W. HOWELL, Bowling Green. To salary as Stenographer.		
August 1.	VOUCHER CHECK No. 380.....	\$3 42	
	GLOBE-WERNICKE COMPANY, Cincinnati. To 1000 index cards June 16	\$ 3 11	
	To postage	31	
August 1.	VOUCHER CHECK No. 381.....	\$43 42	
	KELLY KASH, Attorney, Irvine. To R. R. fare to Lexington taking depositions.	\$ 2 56	
	To hotel bill same trip	4 00	
	To R. R. fare Louisville to see Mr. Forcht	7 36	
	To hotel bill and bus fare to Louisville	6 00	
	To R. R. fare Stanton—two trips	6 00	
	To hotel bill Stanton—two trips	7 00	
	To R. R. fare and hotel bill J. D. Kiser	7 00	
	To R. R. fare and hotel bill Dr. Venable	3 50	
August 1.	VOUCHER CHECK No. 382.....	\$243 25	
	DR. LESLIE BRAND, Maysville. To plaintiff's costs	\$ 20 90	
	To defendant's costs	15 85	
	To defendant's costs, second trial	11 85	
	To defendant's costs, third trial	27 60	
	To Court of Appeals costs	203 60	
		<u>\$279 80</u>	
	By check for costs paid May 1, 1914.....	36 55	
August 1.	VOUCHER CHECK No. 383.....	\$76 15	
	DR. PEYTON LIGON, Henderson. To plaintiff's costs first and second trial in Henderson County Court—case of Amos Allen vs. Peyton Ligon.		
August 1.	VOUCHER CHECK No. 384.....	\$5 60	
	E. G. NORTON, Louisville. To taking depositions of Juanita Thompson on cross-examination in suit Jefferson Circuit Court	\$ 5 00	
	To amount paid J. W. Jenkins, notice and subpoena	60	
August 1.	VOUCHER CHECK No. 385.....	\$202 90	
	TIMES-JOURNAL PUBLISHING CO. To 2300 80-page July 1st JOURNALS	\$200 90	
	To 2300 envelopes	2 30	
	By 10 errors		2 50
	To 11 changes	2 20	
		<u>\$205 40</u>	
	By errors	2 50	

September 1. VOUCHER CHECK No. 386.....	\$125 00
DR. A. T. McCORMACK, Bowling Green. To salary as Secretary.	
September 1. VOUCHER CHECK No. 387.....	\$40 00
DR. L. H. SOUTH, Bowling Green. To salary as Business Manager.	
September 1. VOUCHER CHECK No. 388.....	\$75 00
CLYDE W. HOWELL, Bowling Green. To salary as Stenographer.	
September 1. VOUCHER CHECK No. 389.....	\$25 00
W. C. MORRIS, Postmaster, Bowling Green. To postage advanced on JOURNALS.	
	\$11,591 42

EXHIBIT "C."

Detailed list of receipts from county societies from September 1, 1916 to September 1, 1917, compared with incomes of same period last year.

County	1916	1917
Adair	\$ 27 00	\$ 30 00
Allen	42 00	39 00
Anderson	24 50	24 00
Ballard	54 00	51 00
Barren	69 00	69 00
Bath	30 00	39 00
Bell	93 00	69 00
Boone	33 00	29 00
Bourbon	42 00	45 00
Royd	84 00	84 00
Boyle	47 00	42 00
Bracken	15 50	16 00
Breathitt	30 00	25 00
Breckinridge	63 00	57 00
Bullitt	30 00	36 00
Butler	15 00	12 00
Caldwell	36 00	42 00
Calloway	51 00	67 00
Campbell-Kenton	345 00	318 00
Carlisle	36 00	36 00
Curroll	30 00	27 00
Carter	48 00	43 50
Casey	33 00	27 00
Christian	153 50	145 00
Clark	63 00	90 00
Clay	27 00	18 50
Clinton	18 00	18 00
Crittenden	23 50	24 00
Cumberland	24 00	18 00
Daviess	207 00	189 00
Elliott	3 00	6 00
Estill	9 00	15 00
Fayette	207 00	216 00
Fleming	60 00	48 00
Floyd	30 00	21 00
Franklin	81 00	69 00
Fulton	51 00	48 00
Gallatin	15 00	15 00
Garrard	33 00	42 00
Grant	36 00	30 00
Graves	111 00	111 00
Grayson	51 00	51 00
Green	15 00	25 00
Greenup	36 00	33 00
Hancock	3 00	3 00
Hardin	72 00	78 00
Harlan	33 00	45 00
Hart	33 00	39 00
Harrison	63 00	63 00
Henderson	90 00	99 00
Henry	57 00	45 00
Hickman	45 00	36 00
Hopkins	84 00	80 00
Jackson	15 00	15 00
Jefferson	890	844 50
Jessamine	33 00	30 00
Johnson	27 50	39 50
Knox	51 00	45 00
Knott		9 25
Larue	30 00	30 00
Laurel	33 00	42 00
Lawrence	47 75	33 00
Lee	27 00	18 00
Leslie	18 00	9 00
Letcher	27 00	42 00
Lewis	30 00	27 00
Lincoln	54 00	54 00
Livingston	18 00	39 00
Logan	72 00	72 00
Lyon	21 00	24 00
McCracken	132 00	138 00
McCreary	21 00	18 00
McLean	21 00	36 00
Madison	66 00	51 00

Magoffin	27 00	18 00
Marion	60 00	63 00
Marshall	39 00	60 00
Martin		3 00
Mason	72 00	54 00
Meade	30 00	27 00
Menifee	6 50	6 50
Mercer	57 00	65 50
Metcalfe	39 00	39 00
Monroe	42 00	42 00
Montgomery	48 00	48 00
Morgan	12 00	15 00
Muhlenberg	63 00	75 00
Nelson	45 00	45 00
Nicholas	27 00	39 00
Ohio	24 00	47 50
Oldham	34 50	33 00
Owen	21 00	21 00
Owsley	21 00	15 00
Pendleton	51 00	45 00
Perry	37 00	36 00
Pike	47 00	54 00
Powell	24 00	18 00
Fulaski	57 00	45 00
Robertson	12 00	12 00
Rockcastle	27 00	21 00
Rowan	24 00	12 00
Russell	27 00	27 00
Scott	54 00	54 00
Shelby	64 00	51 00
Simpson	36 00	36 00
Spencer	15 00	15 00
Taylor	36 00	30 00
Todd	36 00	27 00
Trigg	24 00	23 00
Trimble	15 00	
Union	61 00	58 50
Warren	132 50	171 00
Washington	42 00	42 00
Wayne	27 00	36 00
Webster	21 00	31 00
Whitley	81 00	72 00
Wolfe	21 50	15 50
Woodford	30 00	24 00

EXHIBIT "D."

Invoice of the property of the Association,
September 1, 1917.

INVOICE OF PROPERTY OF THE ASSOCIATION SEPTEMBER 1, 1917.

Addressograph with 5,000 complete addressed plates, with list devices, etc	\$ 600 00
Folding Machine	140 00
2 Oliver Typewriters	200 00
1 Desk	79 00
Filing Cabinet	64 75
Rubber Stamps	9 00
Typewriter Cabinet	33 00
Guide Cards	7 48
1-3 Adding Machine	106 25
Typewriter Chair	9 00
1 Electric Fan	18 00
1 Desk Chair	32 50
1 Globe Safe with fixtures	130 00
2,000 No. 5 two-cent stamped envelopes	42 48
2,000 No. 8 two-cent stamped envelopes	44 00

Total	\$1515 46
Reduction for depreciation of machinery	500 00
	\$1015 46

EXHIBIT "G."

Secretary's Monthly Balance Sheet, agreeing with the books.

1917	Expense	Collection	Balance
Oct. 1—To bal. on hand..	\$1291 53	\$ 978 55	5109 81
Nov. 1—To bal. on hand..	1570 73	687 13	4226 21
Dec. 1—To bal. on hand..	1921 52	462 10	2766 79
Jan. 1—To bal. on hand..	1514 17	954 65	2207 27
Feb. 1—To bal. on hand..	849 80	1445 78	2803 25
Mch. 1—To bal. on hand..	466 34	1159 78	3496 69
Apr. 1—To bal. on hand..	905 20	1439 76	4031 25
May 1—To bal. on hand..	615 58	2565 14	5980 81
June 1—To bal. on hand..	718 42	1870 78	7133 17
July 1—To bal. on hand..	626 64	562 33	7068 86
Aug. 1—To bal. on hand..	846 49	541 18	6763 55
Sept. 1—To bal. on hand..	265 00		6498 55
	\$11591 42	\$12667 18	
Balance on hand Sept. 1, 1916.....		5422 79	
		\$18089 97	
Balance on hand Sept 1, 1917.....			\$ 6498 55
Total expense			11591 42
			\$18089 97

EXHIBIT "H."

Collections by Editor on account of THE JOURNAL, corresponding with checks, deposit slips and receipts filed herewith.

1916-1917		
Oct. 1—To collections to October 1.....	\$ 838 55	
Nov. 1—To collections to November 1.....	582 63	
Dec. 1—To collections to December 1.....	439 10	
Jan. 1—To collections to January 1.....	460 15	
Feb. 1—To collections to February 1.....	470 03	
Mch. 1—To collections to March 1.....	350 28	
Apr. 1—To collections to April 1.....	373 76	
May 1—To collections to May 1.....	428 64	
June 1—To collections to June 1.....	1539 28	
July 1—To collections to July 1.....	486 83	
Aug. 1—To collections to August 1.....	461 18	
Total for year	\$6430 43	

EXHIBIT "I."

Collections by Secretary on account of Kentucky State Medical Association, corresponding with checks, deposit slips and receipts filed herewith.

1916-1917		
Oct. 1—To collections to October 1.....	\$ 140 00	
Nov. 1—To collections to November 1.....	104 50	
Dec. 1—To collections to December 1.....	23 00	
Jan. 1—To collections to January 1.....	494 50	
Feb. 1—To collections to February 1.....	975 75	
Mch. 1—To collections to March 1.....	809 50	
Apr. 1—To collections to April 1.....	1066 00	
May 1—To collections to May 1.....	2136 50	
June 1—To collections to June 1.....	331 50	
July 1—To collections to July 1.....	75 50	
Aug. 1—To collections to August 1.....	80 00	
Total for year	\$6236 75	

REPORT OF THE SECRETARY.

In addition to, and even, on account of its transcendent importance over any other event of historic times, overshadowing all of the ordinary activities of the medical organization of Kentucky, there has loomed over us for months past the growing realization of the part we are to play in a world at war. Cast as individuals, and as a whole, in peaceful moulds, it has been most difficult for us to realize, each of us, our responsibility for the preservation of the freedom of all the nations on the earth. The physician's problem has heretofore been the healing of the sick, and to a lesser, though rapidly growing extent, the prevention of sickness. His problem now is

the systematic examination of the well—or apparently well—with a view to the elimination of the unfit for war. Some five hundred Kentucky doctors, well selected by Governor Stanley, are exhausting science in attempting to make Kentucky's contribution to America's war machine so good in its man-power, that no weakling may endanger its success. It is important for the State and Nation to remember that one of each three of the patriots who performed the onerous and responsible duties of the War Draft Exemption Boards was a physician—a general practitioner—himself practically drafted by the Chief Executive of his Commonwealth from civil practice, without other reward or compensation than a sense of duty done—done quietly and well.

The Medical Section of the State Defense Council, of which Dr. J. Garland Sherrill is Chairman, selected me as secretary so as to have available the machinery of the Association, as well as that of the State Board of Health, with the purpose of presenting to every practicing physician in Kentucky the urgent emergency in which the nation finds itself, especially in its demand for qualified medical men. This work is being done under the general direction of the Medical Section of the Council on National Defense of which Maj. Franklin H. Martin, well known as the coadjutor of the late Dr. John B. Murphy, in the organization of the American College of Surgeons, and Maj. F. F. Simpson, the distinguished surgeon, Pittsburg, are in charge. In further recognition of this Association, your secretary, who had been a lieutenant in the old medical reserve corps since its creation was commissioned as a major and made president of an examining board at Bowling Green. Maj. F. T. Fort, Louisville, and Lieut. J. W. Stephenson, Ashland, were also commissioned as examiners. Largely through the influence of this Association, 324 commissions have been issued to Kentucky physicians, and most of them have accepted them and are on duty with the army now.

With the assistance of Capts. P. E. Blackerby, D. P. Curry, E. Rau, and C. B. Kobert, all of the medical reserve corps, and of the effective secretaries of the county societies a medical census has been begun. The following table indicates the number of physicians in each county and in each councilor district who are available for the active list, those under 35 years of age, in the first column; those available for the reserve list, between 35 and 55 years of age, in the second column, while the third column shows those over 55 years of age, who are not yet eligible for the Medical Reserve Corps on account of age. From these figures will be deducted those absolutely required for the protection of the people at home, those with dependent families which cannot be cared for on an

officer's salary and those who are physically or professionally unfit.

Physician under 35 years of age.	Physicians between 35 and 55 years.	Physicians over 55 years of age
FIRST DISTRICT.		
Ballard	3	15
Caldwell	4	14
Calloway	9	14
Carlisle	5	7
Fulton	4	21
Graves	7	30
Hickman	2	11
Livingston	2	11
Lyon	2	3
Marshall	4	16
McCracken	6	45
Trigg	5	7
Hancock	1	6
53	194	46
SECOND DISTRICT		
Breckinridge	3	17
Crittenden	3	6
Diavess	8	41
Henderson	6	24
Hopkins	6	33
McLean	0	13
Muhlenberg	4	25
Ohio	4	18
Union	7	22
Webster	8	23
50	228	93
THIRD DISTRICT.		
Allen	4	10
Barren	6	16
Butler	1	6
Christian	8	38
Cumberland	1	7
Logan	6	16
Metcalfe	2	4
Marion	5	10
Warren-Edmonson	9	37
Simpson	2	12
Todd	6	12
50	168	86
FOURTH DISTRICT.		
Bullitt	1	6
Grayson	3	15
Hardin	4	22
Hart	6	6
Henry	1	19
Larue	2	7
Meade	1	8
Shelby	5	18
Oldham	0	4
Nelson	0	16
23	124	70
FIFTH DISTRICT.		
Anderson	2	10
Boone	3	12
Carroll	1	9
Franklin	1	25
Gallatin	1	4
Jefferson	140	372
Owen	0	14
148	386	92
SIXTH DISTRICT.		
Adair	4	7
Boyle	1	16
Marion	5	10
Green	2	6
Mercer	1	20
Taylor	0	0
Washington	2	13
15	72	23
SEVENTH DISTRICT.		
Casey	3	9
Clinton	1	4
Garrard	5	5
Lincoln	0	15
Pulaski	6	18
Rockcastle	2	9

Russell	3	9	2
Wayne	2	6	4
McCreary	4	6	0
	<hr/> 26	<hr/> 81	<hr/> 23

EIGHTH DISTRICT.			
Bourbon	4	25	7
Bracken	3	8	3
Campbell	16	42	14
Kenton	20	46	29
Campbell-Kenton	36	88	43
Fleming	4	9	9
Grant	0	12	7
Harrison	5	17	6
Jessamine	3	12	4
Mason	5	17	6
Nicholas	2	9	6
Pendleton	1	12	5
Robertson	2	4	1
Scott	1	16	5
Woodford	1	17	5
	67	246	107

NINTH DISTRICT.			
Boyd	3	25	3
Carter	4	10	2
Elliott	1	2	2
Floyd	5	15	2
Johnson	3	19	1
Lewis	3	6	2
Lawrence	3	11	3
Magoffin	0	0	0
Martin	0	3	0
Pike	11	16	2
	<hr/> 33	<hr/> 107	<hr/> 17

TENTH DISTRICT.			
Bath	3	9	6
Breathitt	5	6	0
Clark	7	18	7
Estill	1	5	2
Fayette	26	58	23
Knott	1	3	0
Lee	4	4	0
Letcher	5	10	0
Madison	5	25	7
Menifee	0	3	1
Montgomery	2	17	4
Owsley	1	3	1
Perry	4	15	2
Powell	0	6	1
Rowan	2	5	3
Welfe	2	6	4
	<hr/> 66	<hr/> 188	<hr/> 61

ELEVENTH DISTRICT.			
Bell	9	22	1
Clay	1	7	2
Harlan	6	7	2
Jackson	2	5	0
Knox	1	13	4
Laurel	2	13	2
Leslie	0	1	0
Whitley	10	23	4
	<hr/> 31	<hr/> 91	<hr/> 15

In the following list, an attempt has been made to give the names of those who have applied for commissions as well as those who have been commissioned. It is suggested that from month to month this roll of honor be continued in the JOURNAL showing the names, and so far as possible the location or duty of the Kentucky doctors in the National Army.

MEDICAL RESERVE CORPS.*

ALLEN COUNTY

Lieut L. M. Weaver, M. R. C., Allen Springs.
Capt. H. M. Meredith, M. R. C., Scottsville,
Lieut. Geo. R. Keen, M. R. C., Scottsville, Ky.
Dr. J. H. White, Holland, Ky.
Dr. W. H. Harris, Scottsville, Ky.

*Those commissioned have rank noted. Others have tendered their services, but, at the time of going to press, were not commissioned.

ANDERSON COUNTY

Lieut. A. C. Overall, M. R. C., Lawrenceburg,
Dr. G. D. Lillard, Lawrenceburg, Ky.

BALLARD COUNTY

Dr. Ezra Titworth, Bandana, Ky.
Dr. N. L. Rogers, Wickliffe, Ky.
Dr. T. J. Davis, Wickliffe, Ky.
Dr. Ralph Holt, Kevil, Ky.
Dr. Thos. E. Moss, Kevil, Ky.
Lieut. J. F. Hahs, M. R. C., La Center.
Lieut. G. L. Thompson, M. R. C., Lovelaceville, Ky.
Lieut. W. A. Ashbrook, M. R. C., La Center.

BARREN COUNTY.

Lieut. S. J. Smock, M. R. C., Glasgow, Ky.
Dr. T. F. Miller, Glasgow.
Dr. C. C. Howard, Glasgow.
Dr. C. C. Turner, Glasgow.

BATH COUNTY

Lieut. H. L. Nickell, M. R. C., Salt Lick
Lieut. J. S. Goodpaster, M. R. C., Owingsville,

BELL COUNTY

Dr. G. W. Stone, Middlesboro, Ky.
Dr. M. D. Hoskins, Varilla, Ky.
Lieut. T. T. Gibson, M. R. C., Middlesboro.

BOONE COUNTY

BOURBON COUNTY

Lieut. M. J. Stem, M. R. C., Paris, Ky.

BOYD COUNTY

Lieut. A. C. Bond, M. R. C., Ashland, Ky.
Lieut. J. W. Stephenson, M. R. C., Ashland,
Dr. J. M. Salmon, Ashland, Ky.
Dr. H. S. Swope, Ashland, Ky.
Capt. P. C. Layne, M. R. C., Ashland, Ky.
Lieut. Smithfield Keffer, M. R. C., Ashland.
Dr. Wm. O. Eaton, Ashland, Ky.
Dr. A. J. Bryson, Ashland, Ky.

BOYLE COUNTY

Lieut. T. R. Griffin, M. R. C., Danville, Ky.

BRACKEN COUNTY

Lieut. Chas. Rothe Rice, M. R. C., Augusta.

BREATHITT COUNTY

Lieut. Luther Bach, M. R. C., Jackson, Ky.
Lieut. Earl Moorman, M. R. C., Jackson, Ky.
Lieut. O. H. Swango, M. R. C., Jackson, Ky.
Lieut. H. L. Biggs, M. R. C., Jackson, Ky.

BRECKINRIDGE COUNTY

Lieut. L. B. Moremen, M. R. C., Irvington.
Lieut. W. W. Martin, M. R. C., MeQuady, Ky.
Dr. E. C. Harned, Garfield, Ky.

BULLITT COUNTY

Dr. Roseoe I. Kerr, Belmont, Ky.
Dr. S. H. Ridgway, Shepherdsville, Ky.
Lieut. S. W. Bates, M. R. C., Shepherdsville,
Lieut. O. E. Johnson, M. R. C., Lebanon Jet.

BUTLER COUNTY

Dr. G. E. Embry, Morgantown, Ky.
Dr. J. C. Dodson, Richlieu, Ky.

CALDWELL COUNTY

Dr. I. Herman Sloss, colored, Princeton, Ky.
Dr. Frank Walker, Princeton, Ky.
Capt. R. W. Ogilvie, M. R. C., Princeton, Ky.
Lieut. John R. Jones, M. R. C., Princeton,

CALLOWAY COUNTY

Lieut. H. W. Gingles, M. R. C., Kirksey.
Dr. L. E. Smith, Almo, Ky.
Dr. T. B. House, Murray, Ky.
Dr. W. H. Harris, Lynn Grove, Ky.

CAMPBELL COUNTY

Dr. Claude Youtsey, Newport, Ky.
Lieut. Wm. A. Kreiger, M. R. C., Newport.
Capt. C. W. Shaw, M. R. C., Alexandria, Ky.
Lieut. J. A. Robertson, M. R. C., Ft. Thomas.
Lieut. H. A. Sutter, M. R. C., Newport, Ky.
Capt. J. L. Phythian, M. R. C., Newport, Ky.
Dr. Thos. H. Kelly, Covington, Ky.
Dr. C. N. Heisel, Covington, Ky.
Lieut. Shaler Berry, M. R. C., Newport, Ky.
Lieut. W. W. Anderson, M. R. C., Newport.
Lieut. O. P. Hodge, M. R. C., Giants Lick, Ky.

CARLISLE COUNTY

Dr. Thos. A. Pease, Kirbyton, Ky.
Lieut. H. P. Mosby, M. R. C., Bardwell, Ky.
Dr. H. A. Gilliam, Millburn, Ky.
Dr. R. C. Burrow, Cunningham, Ky.
Lieut. D. S. Robertson, M. R. C., Cunningham.

CARROLL COUNTY

Lieut. J. P. Wheeler, M. R. C., Carrollton, Ky.

CARTER COUNTY

CASEY COUNTY

Lieut. H. F. Taylor, M. R. C., Mintonville,

CHRISTIAN COUNTY

Lieut. Irl Thomas, M. R. C., Pembroke, Ky.
Lieut. S. E. Stroube, M. R. C., Edgote, Ky.
Dr. O. F. Miller, Hopkinsville, Ky.
Dr. L. G. Alexander, Hopkinsville, Ky.
Lieut. C. A. Robertson, M. R. C., Hopkins-

CLARK COUNTY

Lieut. D. H. McKinley, M. R. C., Winchester.
ville, Ky.
Lieut. C. R. Bush, M. R. C., Winchester, Ky.
Dr. Howard Lyon, Winchester, Ky.
Lieut. Nathan Feld, M. R. C., Winchester.

CLAY COUNTY

CLINTON COUNTY

CRITTENDEN COUNTY

Lieut. J. B. Sory, M. R. C., Crayne, Ky.

CUMBERLAND COUNTY

Lieut. Osear Keen, M. R. C., Burkesville, Ky.

DAVIESS COUNTY

Capt. Robert Loekhart, M. R. C., Owensboro, .
Dr. P. G. Walker, Owensboro, Ky.
Lieut. C. C. Phillips, M. R. C., Owensboro.
Dr. J. A. Kirk, Philpot, Ky.
Lieut. I. J. Hoover, M. R. C., Owensboro, Ky.

Dr. R. E. Griffin, Owensboro, Ky.
 Lieut. W. J. Froitzheim, M. R. C., Owensboro.
 Dr. Jacob Glahn, Owensboro, Ky.
 Dr. R. B. Bell, Owensboro, Ky.

EDMONSON COUNTY

Lieut. J. H. Howe, M. R. C., Rocky Hill, Ky.

ELLIOTT COUNTY

ESTILL COUNTY

Lieut. R. R. Snowden, M. R. C., Ravenna.

FAYETTE COUNTY

Lieut. W. S. Wyatt, M. R. C., Lexington, Ky.
 Capt. L. C. Redmon, M. R. C., Lexington, Ky.
 Lieut. W. D. Reddish, M. R. C., Lexington.
 Dr. E. W. Mitchell, Lexington, Ky.
 Lieut. H. G. Herring, M. R. C., Lexington,
 Lieut. C. C. Garr, M. R. C., Lexington, Ky.
 Lieut. Walter Cox, M. R. C., Lexington, Ky.
 Lieut. C. B. Wilmott, M. R. C., Lexington,
 Dr. C. A. Vance, Lexington, Ky.
 Capt. O. L. Smith, M. R. C., Lexington, Ky.
 Lieut. J. T. McClymonds, M. R. C., Lexington, Ky.
 Lieut. S. B. Marks, M. R. C., Lexington.
 Lieut. A. M. Perry, M. R. C., Lexington.
 Lieut. G. H. Wilson, M. R. C., Lexington.
 Dr. R. J. Estill, Lexington, Ky.
 Dr. A. C. Brown, Lexington, Ky.
 Lieut. J. D. Kiser, M. R. C., Lexington, Ky.
 Maj. B. F. VanMeter, M. R. C., Lexington,
 Maj. David Barrow, M. R. C., Lexington.

FLEMING COUNTY

Dr. W. T. Jessee, Plummers Ldg, Ky.

FLOYD COUNTY

Lieut. W. L. Stumbo, M. R. C., Weeksbury,
 Lieut. H. H. Mayo, M. R. C., Allen, Ky.
 Lieut. J. H. Allen, M. R. C., Langley, Ky.
 Lieut. Edward Stumbo, M. R. C., Smalley, Ky.
 Lieut. H. C. Bevins, M. R. C., Thomas, Ky.
 Lieut. Ernest Elmo Archer, M. R. C., Auxier,

FRANKLIN COUNTY

Lieut. E. E. Hume, M. R. C., 28, Frankfort.
 Lieut. A. Stewart, M. R. C., Frankfort.

FULTON COUNTY

Capt. Hugh E. Prather, M. R. C., Hickman.
 Dr. C. A. Wright, Cayce, Ky.
 Lieut. G. A. Crafton, M. R. C., Fulton, Ky.
 Dr. A. J. Turney, Crutchfield, Ky.
 Dr. J. A. Phelps, Fulton, Ky.
 Dr. Lon Naylor, Hickman, Ky.
 Lieut. W. D. Henry, M. R. C., Crutchfield,
 Lieut. J. M. Hubbard, M. R. C., Hickman, Ky.
 Dr. J. R. Hillman, Hickman, Ky.
 Lieut. P. B. Curlin, M. R. C., Hickman, Ky.
 Lieut. S. Cohn, M. R. C., Fulton, Ky.
 Lieut. J. M. Alexander, M. R. C., Fulton, Ky.
 Lieut. Horace Luten, M. R. C., Fulton, Ky.

GALLATIN COUNTY

GARRARD COUNTY

Lieut. V. G. Kinnaird, M. R. C., Lancaster,
 Lieut. W. L. Carman, M. R. C., Paint Lick,

GRANT COUNTY

GRAVES COUNTY

Lieut. Edw. Adams, M. R. C., Boaz.
 Lieut. J. R. Pryor, M. R. C., Mayfield, Ky.
 Lieut. Stanley Mullins, M. R. C., Wingo, Ky.
 Lieut. M. W. Hurt, M. R. C., Mayfield, Ky.,
 (Route 10).
 Dr. Jno. H. Shelton, Mayfield, Ky.
 Lieut. Nona Bybe Ellis, M. R. C., Lynnnville.
 Lieut. Y. Y. Miller, M. R. C., Pryorsburg, Ky.
 Dr. W. B. Stokes, Farmington, Ky.
 Dr. E. A. Stevens, Mayfield, Ky.
 Dr. H. A. Shelby, Mayfield, Ky.
 Dr. M. W. Page, Wingo, Ky.
 Dr. J. H. Puryear, Mayfield, Ky.
 Dr. Mont. McNealey, Wingo, Ky.
 Dr. P. A. Moore, Water Valley, Ky., (Route
 No. 2).
 Dr. W. S. Hargrove, Hickory, Ky.
 Dr. H. H. Hunt, Mayfield, Ky.
 Dr. B. Flint, Wingo, Ky.
 Dr. J. L. Dismukes, Mayfield, Ky.
 Dr. L. G. Colley, Farmington, Ky.
 Lieut. Garnett Belote, M. R. C., Mayfield, Ky.

GRAYSON COUNTY

Capt. R. L. Glascock, M. R. C., Caneyville.
 Dr. J. W. Brandon, Big Clifty, Ky.

GREEN COUNTY

GREENUP COUNTY

Lieut. S. C. Smith, M. R. C., Greenup, Ky.
 Lieut. J. D. Biggs, M. R. C., Greenup.

HANCOCK COUNTY

HARDIN COUNTY

Dr. H. D. McPherson, East View, Ky.
 Lieut. E. C. Brandon, M. R. C., Elizabethtown, Ky.
 Lieut. E. W. Montgomery, M. R. C., Vine Grove, Ky.

HARLAN COUNTY

HARRISON COUNTY

Lieut. L. N. Todd, M. R. C., Berry, Ky.
 Lieut. G. A. Beckett, M. R. C., Sunrise, Ky.
 Lieut. R. W. Wood, M. R. C., Cynthiana, Ky.,
 (Route 1).

HART COUNTY

Lieut. W. A. Weldon, M. R. C., Hardyville,
 Dr. H. P. Honaker, Horse Cave, Ky.

HENDERSON COUNTY

Lieut. W. T. Travis, M. R. C., Henderson, Ky.
 Dr. W. W. W. Wilson, Henderson, Ky.
 Capt. M. H. Yeaman, M. R. C., Henderson.
 Capt. W. A. Poole, M. R. C., Henderson, Ky.
 Capt. W. H. Dade, M. R. C., Henderson, Ky.
 Lieut. W. B. Negley, M. R. C., Henderson.

HENRY COUNTY

Lieut. J. T. McDonald, M. R. C., New Castle,
 Lieut. W. W. Leslie, M. R. C., Rockport, Ky.

HICKMAN COUNTY

Dr. J. B. Mahan, Moscow, Ky.
 Dr. W. R. Moss, Clinton, Ky.

Lieut. W. F. Peebles, M. R. C., Clinton, Ky.,
(Route 3).
Lieut. J. W. McPheeters, M. R. C., Columbus,
Capt. J. R. Lee, M. R. C., Columbus, Ky.
Lieut. Chas. Hunt, M. R. C., Clinton, Ky.
Dr. W. T. Berry, Oakton, Ky.
Dr. J. A. Farabough, Clinton, Ky.

HOPKINS COUNTY

Lieut. Leonard Champion, M. R. C., Morton's
Gap, Ky.
Lieut. M. S. Veal, M. R. C., Daniel Boone, Ky.
Capt. A. O. Sisk, M. R. C., Earlington, Ky.
Lieut. Robt. Sory, M. R. C., Madisonville.
Capt. A. W. Davis, M. R. C., Morton's Gap.

JACKSON COUNTY

Lieut. H. A. Hughes, M. R. C., Bond.

JEFFERSON COUNTY

Lieut. A. O. Goodman, M. R. C., 1525 S. 7th
St., Louisville, Ky.
Lieut. C. P. Harrod, M. R. C., South Park,
Dr. M. B. Guthrie, Louisville, Ky.
Lieut. W. E. McCormack, M. R. C., Louisville,
Capt. J. W. Moore, M. R. C., 1257 Cherokee
Road, Louisville, Ky.
Lieut. E. E. Owen, M. R. C., Atherton Build-
ing, Louisville, Ky.
Dr. J. R. Shacklette, Jeffersontown, Ky.
Lieut. R. B. Tracy, M. R. C., Louisville, Ky.
Dr. F. G. Aud, Louisville, Ky.
Lieut. I. A. Arnold, M. R. C., Louisville, Ky.
Lieut. H. S. Eggers, M. R. C., Louisville, Ky.
Lieut. L. W. Frank, M. R. C., Louisville, Ky.
Maj. E. O. Grant, M. C., Louisville, Ky.
Lieut. C. E. Gaupin, M. R. C., Louisville, Ky.
Dr. J. A. Brady, St. Mathews, Ky.
Lieut. M. A. Blackburn, M. R. C., Louisville,
Lieut. J. F. Cook, M. R. C., Louisville, Ky.
Maj. Ellis Duncan, M. C., Louisville, Ky.
Lieut. H. H. Duke, M. R. C., Louisville, Ky.
Lieut. L. J. Ernstberger, M. R. C., Louisville,
Lieut. J. W. Galvin, M. R. C., Louisville, Ky.
Lieut. A. H. Kelly, M. R. C., Shively, Ky.
Capt. Jethra Hancock, M. R. C., Louisville.
Lieut. W. S. Adams, M. R. C., Louisville.
Lieut. E. R. Bailey, M. R. C., Louisville.
Lieut. E. W. Bates, M. R. C., Louisville.
Lieut. H. S. Brannan, M. R. C., Louisville.
Lieut. W. T. Bruner, M. R. C., Louisville.
Lieut. T. L. Burnett, M. R. C., Louisville.
Lieut. D. L. Cornwell, M. R. C., Louisville.
Lieut. L. R. Edleson, M. R. C., Louisville.
Lieut. M. B. Guthrie, M. R. C., Louisville.
Lieut. M. P. Link, M. R. C., Louisville.
Lieut. T. R. Maxwell, M. R. C., Louisville.
Lieut. G. M. McLeish, M. R. C., Louisville.
Lieut. R. L. Oliver, M. R. C., Louisville.
Lieut. C. F. Ott, M. R. C., Louisville.
Lieut. G. H. Reid, M. R. C., Louisville.
Lieut. O. M. Reynolds, M. R. C., Louisville.
Lieut. L. C. Rudell, M. R. C., Louisville.
Lieut. W. H. Smith, M. R. C., Louisville.
Maj. C. W. Hibbitt, M. C., Louisville, Ky.

Capt. Irvin Lindenberger, M. R. C., Louis-
ville, Ky.

Dr. E. E. Meredith, Louisville, Ky.

Dr. J. C. Mitchell, Louisville, Ky.

Capt. V. N. Meddis, M. R. C., Louisville, Ky.

Capt. A. C. L. Percefull, M. C., Louisville,

Lieut. G. A. Robertson, M. R. C., Louisville,

Lieut. C. K. Berle, M. R. C., Louisville, Ky.

Dr. J. B. Hankal, colored, Louisville, Ky.

Lieut. W. B. Doherty, Jr., M. R. C., Louis-
ville, Ky.

Lieut. J. R. Shacklette, M. R. C., Jefferson-
town, Ky.

Dr. C. W. Karraker, Louisville, Ky.

Lieut. O. R. Miller, M. R. C., Louisville, Ky.

Dr. O. P. Miller, Louisville, Ky.

Lieut. L. W. Neblett, M. R. C., Louisville, Ky.

Lieut. M. E. Pirkey, M. R. C., Louisville, Ky.

Lieut. J. H. Pritchett, M. R. C., Louisville,

Lieut. Cleves Richardson, M. R. C., Louisville,

Capt. J. W. Price, Jr., M. R. C., Louisville.

Lieut. J. B. Voor, M. R. C., Louisville, Ky.

Lieut. J. W. Bruce, M. C., Louisville, Ky.

Lieut. W. A. Foertmeyer, M. C., Louisville,

Lieut. F. Griswald, M. R. C., Louisville, Ky.

Lieut. Hubert R. John, M. R. C., Louisville,

Lieut. Harry L. Peele, M. R. C., Louisville.

Dr. W. Hamilton Long, Louisville, Ky.

Capt. G. S. Hanes, M. R. C., Louisville, Ky.

Dr. J. E. Johnson, Louisville, Ky.

Lieut. F. M. Walker, M. R. C., Louisville, Ky.

Lieut. J. H. Williams, M. R. C., Louisville,

Lieut. R. W. Oliver, colored, M. R. C., Louis-
ville, Ky.

Lieut. G. H. Yenowine, M. R. C., Louisville,

Lieut. Chas. Farmer, M. R. C., Louisville, Ky.

Capt. W. B. Gossett, M. R. C., Louisville, Ky.

Capt. L. C. Stillings, M. R. C., Louisville, Ky.

Dr. R. A. Bate, Louisville, Ky.

Maj. Milton Board, M. R. C., Louisville, Ky.

Lieut. W. O. Humphrey, M. R. C., Louisville,

Capt. A. W. Nettleroth, Louisville, Ky.

Lieut. F. L. Koontz, M. R. C., Louisville, Ky.

Lieut. J. A. Kirk, M. R. C., Louisville, Ky.

Lieut. J. S. Lutz, M. R. C., Louisville, Ky.

Capt. J. J. Moren, M. R. C., Louisville, Ky.

Lieut. R. T. Pirtle, M. R. C., Louisville, Ky.

Lieut. J. B. Richardson, Jr., M. R. C., Louis-
ville, Ky.

Capt. J. G. Sherrill, M. R. C., Louisville, Ky.

Lieut. P. T. Skaggs, M. R. C., Louisville, Ky.

Lieut. W. S. Coolidge, M. R. C., Louisville,

Maj. F. T. Fort, M. R. C., Louisville, Ky.

Dr. H. E. Pelle, Louisville, Ky.

Dr. S. E. Woody, Louisville, Ky.

Dr. Louis Frank, Louisville, Ky.

JOHNSON COUNTY

JESSAMINE COUNTY

Lieut. M. C. Pentz, M. R. C., Nicholasville,
Ky.

Dr. A. T. McCoy, colored, Nicholasville, Ky.

Lieut. H. L. McLean, M. R. C., Wilmore, Ky.

KENTON COUNTY

Lieut. E. M. Culter, M. R. C., Covington.
 Lieut. W. G. Eckman, M. R. C., Covington.
 Lieut. J. M. Staughton, M. R. C., Covington.
 Lieut. H. C. McChord, M. R. C., Ludlow.
 Dr. J. A. Ryan, Covington, Ky.
 Dr. C. N. Heisel, Covington, Ky.
 Dr. M. Behrman, Covington, Ky.
 Lieut. K. L. Tanner, M. R. C., Covington, Ky.
 Lieut. Theo. Salee, M. R. C., Covington, Ky.
 Lieut. W. H. T. Ranshaw, M. R. C., Covington, Ky.
 Lieut. T. H. Nelson, M. R. C., Covington, Ky.
 Lieut. M. D. Gundrum, M. R. C., Covington,
 Dr. Guy Eckman, Covington, Ky.
 Lieut. C. M. Stroup, M. R. C., Ludlow, Ky.

KNOTT COUNTY

KNOX COUNTY

LARUE COUNTY

Lieut. A. L. Solomon, M. R. C., Hodgenville.

LAUREL COUNTY

LAWRENCE COUNTY

LEE COUNTY

Maj. J. H. Evans, M. C., Beattyville, Ky.
 Dr. Lucien Treadway, Ravenna, Ky.

LESLIE COUNTY.

LETCHER COUNTY

LEWIS COUNTY

Lieut. A. C. Henthorne, M. R. C., Garrison,

LINCOLN COUNTY

Lieut. M. L. Pipes, M. R. C., Moreland, Ky.

LIVINGSTON COUNTY

Dr. J. L. Hayden, Salem, Ky.
 Dr. C. A. Maseneup, Lola, Ky.
 Dr. F. V. Matlock, Salem, Ky.
 Dr. J. B. Markey, Birdville, Ky.
 Dr. Edward Davenport, Hampton, Ky.

LOGAN COUNTY

Lieut. Logan Felts, M. R. C., Lewisburg, Ky.
 Lieut. Walter Byrne, Jr., M. C., Russellville.
 Dr. A. M. Belcher, Auburn, Ky.
 Dr. U. G. Davis, Russellville, Ky.
 Lieut. J. S. Wilkinson, M. R. C., Homer, Ky.

LYON COUNTY

Dr. T. W. Landers, Eddyville, Ky.
 Dr. C. H. Linn, Kuttawa, Ky.
 Lieut. T. L. Phillips, M. R. C., Kuttawa, Ky.

M'CRACKEN COUNTY

Lieut. R. W. Brubbs, M. R. C., Paducah, Ky.
 Lieut. H. P. Linn, M. R. C., Paducah, Ky.
 Lieut. E. W. Jackson, M. R. C., Paducah, Ky.
 Dr. Edward Adams, Florence Station, Ky.
 Lieut. C. E. Harkey, M. R. C., Paducah, Ky.
 Lieut. F. A. Hoyer, M. R. C., Paducah, Ky.
 Lieut. V. J. Davis, colored, M. R. C., Paducah,
 Dr. B. L. Bradley, Paducah, Ky.
 Capt. Frank Boyd, M. R. C., Paducah, Ky.
 Lieut. Vernon Blythe, M. R. C., Paducah, Ky.
 Capt. P. H. Stewart, M. R. C., Paducah, Ky.

Lieut. E. B. Willingham, M. R. C., Paducah,
 Capt. H. T. Rivers, M. R. C., Paducah.
 Capt. S. B. Pulliam, M. R. C., Paducah, Ky.
 Dr. W. H. Parsons, Paducah, Ky.
 Dr. W. H. Nelson, colored, Paducah, Ky.
 Lieut. C. C. Morris, M. R. C., Paducah, Ky.
 Capt. W. A. Lackey, M. R. C., Paducah, Ky.
 Dr. C. E. Kidd, Paducah, Ky.
 Dr. C. H. Johnson, Paducah, Ky.
 Dr. H. T. Hessig, Paducah, Ky.

M'CREARY COUNTY

M'LEAN COUNTY

Lieut. P. D. Moore, M. R. C., Calhoun, Ky.
 Dr. H. J. Beard, Livermore, Ky.

MADISON COUNTY

Lieut. A. F. Cornelius, M. R. C., Berea, Ky.

MAGOFFIN COUNTY

Dr. R. C. Adams, Salyersville, Ky.

MARION COUNTY

Dr. T. I. Campbell, Gravel Switch, Ky.
 Dr. O. A. Mitchell, Raywick, Ky.
 Capt. C. B. Kobert, M. R. C., Lebanon, Ky.
 Lieut. E. F. Beard, M. R. C., Bradfordsville,

MARSHALL COUNTY

Lieut. James R. Skinner, M. R. C., Benton,
 Lieut. L. L. Washburn, M. R. C., Benton, Ky.
 Capt. V. A. Stilley, M. R. C., Benton, Ky.
 Lieut. H. T. Carter, M. R. C., Gilbertsville,
 Dr. B. T. Hall, Benton, Ky.

MARTIN COUNTY

MASON COUNTY

Capt. C. W. McClanahan, M. R. C., Maysville,
 Dr. J. D. Grant, Maysville, Ky.
 Lieut. A. O. Taylor, M. R. C., Maysville, Ky.

MEADE COUNTY

Lieut. E. C. Hartman, M. R. C., Brandenburg, Ky.

MENIFEE COUNTY

MERCER COUNTY

Lieut. T. C. Bell, M. R. C., Harrodsburg, Ky.
 Lieut. J. B. Robards, M. R. C., Harrodsburg,
 Capt. J. T. Price, M. R. C., Harrodsburg, Ky.

METCALFE COUNTY

MONROE COUNTY

Dr. J. B. Williams, Tompkinsville, Ky.
 Capt. E. E. Palmore, M. R. C., Strobe, Ky.
 Dr. G. W. Bushong, Tompkinsville, Ky.
 Lieut. J. F. Marrs, M. R. C., Tompkinsville.
 Capt. R. F. Duncan, M. R. C., Tompkinsville,

MONTGOMERY COUNTY

Lieut. O. B. Demaree, M. R. C., Mt. Sterling.
 Dr. Geo. N. Cox, Mt. Sterling, Ky.

MORGAN COUNTY

MUHLENBERG COUNTY

Lieut. F. K. Foley, M. R. C., Central City,
 Dr. J. H. Harralson, Graham, Ky.
 Lieut. C. H. Haberer, M. R. C., Dunmore, Ky.

Dr. C. W. DeWeese, Martwick, Ky.
 Lieut. E. R. Yost, M. R. C., Greenville, Ky.
 Lieut. Claude Wilson, M. R. C., Greenville,
 Lieut. Clarence Woodburn, M. R. C., Central
 City, Ky.

Lieut. Harry Tyldesley, M. R. C., Central
 City, Ky.

Lieut. S. P. Taylor, M. R. C., Central City,
 Lieut. R. B. Morris, M. R. C., Beech Creek,
 Dr. J. M. Ferguson, Central City, Ky.
 Dr. E. M. Bewley, Penrod, Ky.

NELSON COUNTY

Lieut. J. B. Overall, M. R. C., Cox's Creek,

NICHOLAS COUNTY

OLDHAM COUNTY

Lieut. R. B. Pryor, M. R. C., Crestwood, Ky.

OHIO COUNTY

Lieut. Willard Lake, M. R. C., Simmons, Ky.
 Lieut. Henry Smith, M. R. C., Cromwell, Ky.
 Lieut. Oscar Allen, M. R. C., Cromwell, Ky.
 Lieut. A. B. Riley, M. R. C., Hartford, Ky.
 Capt. E. W. Ford, M. R. C., Hartford, Ky.
 Lieut. F. B. DeWitt, M. R. C., Rockport, Ky.
 Lieut. Clarence DeWeese, M. R. C., Fords-
 ville, Ky.

Dr. J. S. Bean, Horse Branch, Ky.

Lieut. J. O. McKenney, M. R. C., Beaver
 Dam, Ky.

OWEN COUNTY

Lieut. Geo. Purdy, M. R. C., New Liberty, Ky.
 Lieut. J. H. Chrisman, M. R. C., Owenton,
 Ky.

OWSLEY COUNTY

PENDLETON COUNTY

Lieut. W. A. McKinney, M. R. C., Falmouth.
 Capt. L. G. Wallace, M. R. C., Falmouth.
 Lieut. F. B. Woolery, M. R. C., Falmouth.
 Lieut. J. E. Wilson, M. R. C., Butler, Ky.
 Dr. C. H. Kendall, Morgan, Ky.
 Dr. L. T. Eckler, Falmouth, Ky.
 Dr. N. H. Ellis, Falmouth, Ky.
 Dr. E. A. Cram, Butler, Ky.

PERRY COUNTY

Lieut. H. P. Duff, M. R. C., Glenn, Ky.
 Lieut. W. E. Ray, M. R. C., Staub, Ky.
 Lieut. R. L. Collins, M. R. C., Hazard, Ky.
 Lieut. Z. M. Abshear, M. R. C., Buckhorn,

PIKE COUNTY

Lieut. M. A. Moore, M. R. C., McVeigh, Ky.
 Lieut. A. G. Osborne, M. R. C., Myra, Ky.
 Lieut. S. B. Casebolt, M. R. C., Pikeville, Ky.
 Lieut. L. F. Boland, M. R. C., Stone, Ky.
 Capt. D. P. Crockett, M. R. C., Hardy, Ky.

POWELL COUNTY

Dr. M. L. Knox, Limbard, Ky.
 Lieut. R. A. Irvin, M. R. C., Clay City, Ky.

PULASKI COUNTY

Capt. S. F. Parker, M. R. C., Somerset, Ky.
 Dr. A. J. Wahle, Somerset, Ky.

Capt. Carl Norfleet, M. R. C., Somerset, Ky.
 Lieut. Edward Gallagher, M. R. C., Somerset,
 Ky.

Lieut. J. A. Bolin, M. R. C., Somerset, Ky.
 Lieut. R. F. Jasper, M. R. C., Somerset.

RUSSELL COUNTY

Capt. P. V. Ballou, M. R. C., Rowena, Ky.

ROWAN COUNTY

Lieut. F. K. Blair, M. R. C., Morehead, Ky.

ROBERTSON COUNTY

Lieut. H. G. Claypool, M. R. C., Mt. Olivet,
 Lieut. J. M. Stevenson, M. R. C., Bratton, Ky.

ROCKCASTLE COUNTY

SCOTT COUNTY

Lieut. R. W. Porter, M. R. C., Georgetown,
 Lieut. H. V. Johnson, M. R. C., Georgetown,

SHELBY COUNTY

Lieut. W. H. Nash, M. R. C., Finchville, Ky.

SIMPSON COUNTY

Lieut. S. R. Guthrie, M. R. C., Franklin, Ky.
 Lieut. N. C. Witt, M. R. C., Franklin, Ky.
 Lieut. C. L. Venable, M. R. C., Franklin, Ky.

SPENCER COUNTY

TAYLOR COUNTY

Lieut. F. I. Buckner, M. R. C., Campbells-
 ville, Ky.

TODD COUNTY

Lieut. R. L. Cobb, M. R. C., Trenton, Ky.
 Capt. C. M. Gower, M. R. C., Trenton, Ky.
 Cape. J. L. Farmer, M. R. C., Allensville, Ky.

TRIGG COUNTY

Lieut. P. T. Frazer, colored, M. R. C., Cadiz.
 Lieut. J. H. Morris, M. R. C., Cadiz, Ky.
 Lieut. W. H. Jefferson, M. R. C., Cadiz, Ky.

TRIMBLE COUNTY

UNION COUNTY

Dr. G. F. Johnson, Waverly, Ky.
 Dr. C. B. Neidhamer, Sturgis, Ky.
 Lieut. D. C. Donan, Jr., M. R. C., Morgan-
 field, Ky.
 Lieut. G. D. Griggs, M. R. C., Waverly, Ky.

WARREN COUNTY

Lieut. C. C. Buford, colored, M. R. C., Bowl-
 ing Green, Ky.
 Lieut. R. C. Moss, M. R. C., Rockfield, Ky.
 Lieut. A. W. White, M. R. C., Oakland, Ky.
 Lieut. E. W. Stone, M. R. C., Bowling Green,
 Lieut. B. W. Wright, M. C., Bowling Green,
 Lieut. W. H. Neel, M. R. C., Bowling Green,
 Lieut. W. A. Callis, M. R. C., Bowling Green,
 Green, Ky.
 Maj. A. T. McCormack, M. R. C., Bowling
 Green, Ky.
 Capt. P. E. Blackerby, M. R. C., Bowling
 Green, Ky.
 Capt. D. P. Curry, M. R. C., Bowling Green.
 Maj. J. H. Blackburn, M. R. C., Bowling
 Green, Ky.

Dr. E. L. Adington, Smith's Grove, Ky.
 Lieut. J. A. Grider, M. R. C., Smith's Grove,
 Lieut. F. D. Cartwright, M. R. C., Bowling
 Green, Ky.
 Lieut. M. M. Moss, M. R. C., Bowling Green,
 Lieut. Finis London, M. R. C., Woodburn.
 Lieut. W. C. Simmons, M. R. C., Smith's
 Grove, Ky.
 Capt. Ernest Ran, M. R. C., Bowling Green.
 Dr. J. O. Carson, Bowling Green, Ky.

WASHINGTON COUNTY

Lieut. M. W. Hyatt, M. R. C., Springfield,
 Lieut. G. W. Hill, M. R. C., Springfield, Ky.
 Lieut. J. W. McElroy, M. R. C., Springfield.

WAYNE COUNTY

Lieut. O. H. P. Parringer, M. R. C., Mills
 Springs, Ky'.

WEBSTER COUNTY

WHITLEY COUNTY

Lieut. Lee Rose, M. R. C., Siler, Ky.
 Dr. L. O. Smith, Williamsburg, Ky.

WOLFE COUNTY

WOODFORD COUNTY

In further recognition of the splendid medical organization of Kentucky, the Surgeon General has created an Examining Board consisting of your Secretary and Dr. Rau, for many years the Chairman of the Council, and whose practice is limited to diseases of the eye, ear, nose and throat, and Dr. C. B. Kobert, of Lebanon, with instructions to proceed on a fixed itinerary to a large number of towns throughout the State so located as to be available to practically every physician in it. This itinerary will begin on September 18th. and will be arranged in conjunction with the Councilors and County Secretaries in such a way as to be most convenient for the entire organization. At its conclusion, it is hoped that this Board will be able to report to the Surgeon General the names of all the physicians in Kentucky, who should be called into the active service, and the names of all those who should stay at home and the reasons in each case for this decision. It will be seen at once that it is essential that the Board have the cooperation of every doctor in Kentucky, in order that its report may be of value.

In this time of national stress, the value of such an organization as the profession of Kentucky has been building for the past forty years is more manifest than at any other time. It is to be regretted that the National Red Cross could not have accepted the suggestions made by Dr. J. N. McCormack many years ago for such a constructive organization of the profession and the allied professions of nursing and pharmacy in every county in the United States. that hospitals and training schools could have been organized in each of them and could have been so trained by the constant solution of the ordinary local prob-

lems of disease and health administration that an organization would have been readily made for the country in time of such national danger as now threatens. As it has not been adopted for the whole country, it is important that, so far as we are concerned, we do our part well, and I desire to suggest that this matter be taken up constructively by this Association with a view to such an organization in Kentucky as will make available for every one of its citizens the best form of medical or surgical treatment, or the best advice in preventive medicine at such a price that he cannot afford not to get it.

It is particularly unfortunate that we continue to have between 400 and 600 doctors each year to pay their dues on an average of about one year in five and are missed in the annual collections by the secretaries the other years. Doctors Moren, McClure and I in our various reports have called attention to this year, each year with apparently little result. It is particularly unfortunate that such delinquents have failed to realize the real meaning of membership in the Association, and they receive the JOURNAL for so short a time each year that they cannot keep in touch with progress in medicine, know little or nothing about what the organization is doing and have no sustained interest in its affairs. They are not protected from unjust malpractice suits, they are not eligible for appointment on boards of health or as examiners for Insurance companies, cannot be recommended for reciprocity for other states in case they apply, and are hangers on in the profession rather than real members of it. It is particularly important that the younger members of the profession understand that they cannot get reciprocity or other recognition from other states unless they are members in good standing of their county societies, because medical progress has reached the point where no state wants a physician who is not on good terms with the profession of his immediate vicinity. We must all realize, and especially the Councilors and County Secretaries must realize that the Association still has before it its most important work—making a real working body of the county societies which are now shells. There are a number of them which do nothing but collect dues. Such are little better than none. Fortunately, eighty-four counties now hold regular meetings. If the physicians living in the less fortunate ones could attend a few of these meetings, it would be easy to complete the effective organization in every county.

I desire to repeat from last year's report that the textbook on sanitation now taught, or required by law to be taught, in every common-school of the State, tells the pupils to ask their family physicians whether they attend county society meetings regularly, and

warns the children that doctors who give excuses for not attending are not safe ones to employ. Popular education is increasing rapidly in all the realms of medicine, and the profession should realize this and each of its members should keep himself abreast of the times, as the new generation coming on is going to demand a class of service from us which we have heretofore been unable to give.

Attached will be found the table which shows the comparative members for last year and this. It will be seen that in many counties there are more members while in a few there are less.

FIRST DISTRICT.

County	MEMBERSHIP	
	1916	1917
Ballard	18	17
Caldwell	12	14
Calhoun	13	21
Carlisle	12	12
Fulton	16	15
Graves	36	37
Hickman	15	12
Livingston	6	11
Lyon	7	8
Marshall	13	18
McCracken	44	46
Trigg	8	7
	200	216

SECOND DISTRICT.

Breckinridge	19	18
Crittenden	8	8
Daviess	68	63
Hancock	1	1
Henderson	29	29
Hopkins	28	26
McLean	7	10
Muhlenberg	21	23
Ohio	8	13
Union	19	18
Webster	7	7
	215	216

THIRD DISTRICT.

Allen	12	13
Barren	24	23
Butler	7	4
Christian	48	48
Cumberland	8	6
Logan	23	23
Metcalfe	13	13
Monroe	14	14
Simpson	12	12
Todd	12	9
Warren Edmonson	41	48
	212	213

FOURTH DISTRICT.

Bullitt	10	10
Grayson	17	17
Hardin	23	25
Hart	11	13
Henry	18	15
Larue	10	10
Meade	10	9
Nelson	15	15
Oldham	11	11
Shelby	21	16
	146	141

FIFTH DISTRICT.

Anderson	8	8
Bacon	10	8
Carroll	10	9
Franklin	25	23
Gallatin	5	14
Jefferson	266	262
Owen	7	7
Spencer	5	5
Trimble	5	0
	341	326

SIXTH DISTRICT.

County	MEMBERSHIP	
	1916	1917
Adair	9	10
Boyle	15	14
Green	5	7
Marion	20	21
Mercer	19	21
Taylor	12	10
Washington	14	14
	94	97

SEVENTH DISTRICT.

Casey	10	9
Clinton	6	6
Garrard	11	13
Lincoln	17	18
McCreary	7	6
Pulaski	18	16
Rockcastle	9	7
Russell	9	9
Wayne	9	11
	96	95

EIGHTH DISTRICT.

Bourbon	14	14
Bracken	5	5
Campbell-Kenton	100	103
Fleming	20	16
Grant	12	10
Harrison	20	21
Jessamine	11	10
Mason	24	20
Nicholas	9	13
Pendleton	17	15
Robertson	4	4
Scott	18	18
Woodford	10	8
	264	257

NINTH DISTRICT.

Boyd	27	28
Carter	16	14
Elliott	1	2
Greenup	12	11
Johnson	9	12
Lawrence	14	11
Lewis	10	9
Magoffin	9	6
Pike	14	18
	112	112

TENTH DISTRICT.

Bath	9	13
Breathitt	9	7
Clark	20	30
Estill	3	5
Fayette	70	70
Knott	0	3
Lee	9	6
Letcher	9	14
Madison	21	16
Menifee	2	1
Montgomery	16	16
Morgan	4	4
Owsley	6	5
Perry	11	12
Powell	8	6
Rowan	8	4
Wolfe	7	5
	212	217

ELEVENTH DISTRICT.

Bell	31	23
Clay	9	6
Harlan	11	15
Jackson	5	5
Knox	17	15
Laurel	11	12
Leslie	5	3
Whitley	27	24
	116	103

In conclusion, I desire to express cordial appreciation of the cooperation of practically all of our county secretaries in the work of the year which they have carried on so well. Upon them and the effective Councilors is practically the burden of the organization. Most societies are failures or successes each in proportion to the working ability of their secretaries.

To the Officers of the Association and to the whole membership, and especially to our book-keeper, Miss Clyde Howell, and my stenographer, Miss Evelyn Gardner, I desire to extend my gratitude for the assistance and courtesies which have made the duties of my position unusually pleasant since my last report.

Respectfully submitted,
A. T. McCORMACK, Secretary.

REPORT OF THE BUSINESS MANAGER.

To the House of Delegates:

It is a pleasure to be able to report to you that, in spite of an increased cost of 33 1-3 per cent. in everything which enters into the publication of the JOURNAL, we have been able to get every issue promptly into the hands of every member, and to publish every article submitted during the year, and to show a profit of \$297.85, without counting any subscriptions as a part of the income. The entire cost of publication and distribution of the JOURNAL has been borne by our advertisers.

In order to continue this successful financial operation, our members must patronize our advertisers better—at least to give them an equal opportunity with other business houses. They must be told over and over and over again, until they understand it, that this JOURNAL rejects much more advertising each year than it accepts, *and that this is done in their interest*. When they need a book, a surgical instrument, biological products, a laboratory analysis, a baby food, an account collected, pharmaceuticals, electric outfits, sanitariums, cocoa, artificial limbs, casualty insurance, medical colleges, baking powder, or anything else advertised in the JOURNAL's columns, write to the advertiser with the JOURNAL's guarantee of square dealing for every single thing advertised. They will furnish the best articles or services at the best prices. I know one hospital that saved 27 per cent on its furniture and equipment by doing this.

As the JOURNAL is owned, controlled and managed solely by its members, the physicians of Kentucky, no one else having a dollar's interest in it, not the slightest voice in the management of its affairs, the following table is of interest as showing the work which is being done by its members through it:

CASH INVENTORY		1916	1917
Number of pages of reading matter.....	712	625	
Number of advertising pages	381	406	
Official Announcements	15	65	
Editorials	77	78	
Scientific Editorials	17	18	
Book Reviews	51	37	
County Society Minutes	84	100	
Original Articles	164	135	
News Items	—	190	

It is to be noted that most county societies are not regularly publishing their minutes. If the county secretary will take the additional trouble of sending these in, it will help him more than any one thing in his work. Barren and Franklin are the only counties reporting with regularity.

Almost one-third of the original articles were furnished by the Jefferson County Medical Society. I am happy to report that we have been able, as for the past nine years, to publish every article which has reached us from a Kentucky physician. The KENTUCKY MEDICAL JOURNAL is the only medical or other organization publication of which this can be said. Let others claim a higher scientific standard if they will. Our boast is that we are an exact reflex of the physicians who form the pure democracy known as the Kentucky State Medical Association.

The late change in the place of meeting this year from Ashland to Louisville and disturbed business conditions will, I fear, be reflected in a smaller commercial exhibit, but the highest standard will be maintained, as heretofore.

The index was published in the December JOURNAL. All articles are indexed and cross-indexed for ready reference. Each month's county society minutes are so indexed that a file of the JOURNAL can be used for official records by good secretaries.

At great expense the JOURNAL is undertaking, under the direction of Drs. J. N. McCormack and L. S. McMurtry, to publish a special historical issue which will reproduce in considerable detail, profusely illustrated, the work and story of the great pioneers who set the standard of medicine and surgery in Kentucky while it was still the "dark and bloody ground." The character of its contents, as well as the names of the distinguished editors, are a sufficient guarantee of its value. I have arranged for handsome, permanent bindings for those of our members who desire to preserve this issue at \$2.00 each. After the JOURNAL has been printed, *and it is too late to secure this permanent binding*, every doctor who is not forehanded enough to place his order early will regret it.

Every article and county society report sent to this office has been published. The advertisements have been carefully and rigidly censored. The Forum is open to any member for criticism or commendation of what appears in the JOURNAL. Each article and statement represents individual views. If you differ with it, it is equally ready to print yours. But do not be a "mouther" or a "knocker." If you have anything to say, write it to us.

The following statistics are published to show the activities of the different societies as shown in the JOURNAL. Unfortunately many

of the best societies do not send their minutes for publication:

	MINUTES		ORIGINAL ARTICLES	
	1916	1917	1916	1917
County				
Adair	0	0	0	0
Allen	0	0	0	0
Anderson	0	1	1	1
Ballard	0	0	0	0
Barren	6	9	2	1
Bath	0	2	0	0
Bell	1	1	9	2
Boone	0	1	1	0
Bourbon	0	0	0	1
Boyd	0	2	1	1
Boyle	2	0	0	2
Bracken	0	0	0	0
Breathitt	1	1	1	1
Breckinridge	1	0	0	0
Bullitt	0	0	2	0
Butler	0	0	0	0
Caldwell	1	2	0	0
Calloway	1	1	1	1
Campbell-Kenton	0	1	6	6
Carlisle	3	5	10	2
Carroll	1	0	0	0
Carter	0	0	0	0
Casey	0	0	0	0
Christian	6	4	4	3
Clark	4	1	0	2
Clay	1	0	0	0
Clinton	0	0	0	0
Crittenden	1	0	0	0
Cumberland	0	0	0	0
Daviess	3	3	9	6
Eagle Valley	1	2	0	2
Elliott	0	0	0	0
Estill	0	0	0	0
Fayette	1	6	8	4
Fleming	0	0	0	0
Floyd	2	0	0	0
Franklin	1	1	0	1
Gallatin	0	0	0	0
Garrard	1	0	0	1
Grant	1	1	0	0
Graves	0	1	1	1
Grayson	0	0	1	0
Green	0	0	1	0
Greenup	2	0	2	0
Hancock	0	0	0	0
Hardin	2	2	1	0
Harlan	1	3	1	0
Harrison	4	4	2	9
Hart	0	1	0	1
Henderson	2	1	0	0
Henry	0	1	1	1
Hickman	0	1	0	0
Hopkins	1	0	1	0
Jackson	0	0	0	0
Jefferson	1	1	64	37
Jessamine	0	0	0	0
Johnson	0	1	0	0
Knott	0	0	0	0
Knox	0	1	0	0
Larue	0	0	1	0
Laurel	1	0	2	0
Lawrence	0	0	0	0
Lee	0	0	0	0
Leslie	0	0	0	0
Letcher	0	0	1	2
Lewis	1	0	0	1
Lincoln	0	0	3	1
Livingston	0	0	0	0
Logan	0	4	0	3
Lyon	3	1	0	0
McCracken	0	3	7	3
McCreary	1	0	0	0
McLean	0	1	0	0
Madison	0	0	0	1
Magoffin	0	0	1	1
Marion	0	2	1	0
Marshall	0	2	1	1
Martin	0	0	0	0
Mason	1	0	0	0
Meade	0	0	0	0
Menifee	0	0	0	0
Mercer	0	0	1	0
Metcalfe	0	0	0	0
Monroe	0	0	0	0
Montgomery	0	1	1	2
Morgan	0	0	0	0
Muhlenberg	0	1	0	0
Muldraugh Hill	2	3	1	4
Nelson	1	0	1	0
Nicholas	0	0	0	0
Ohio	0	0	0	0
Oldham	0	1	0	0
Owen	0	1	0	1
Owsley	0	0	0	0
Pendleton	4	2	3	8
Perry	1	0	0	0
Pike	1	0	0	3
Powell	0	0	0	0
Pulaski	3	2	0	2

Robertson	0	0	0	0
Rockcastle	1	1	0	1
Rowan	1	0	0	0
Russell	1	4	0	1
Scott	0	1	1	0
Shelby	1	0	1	0
Simpson	0	0	0	0
Spencer	0	0	0	0
Taylor	3	2	2	0
Todd	1	1	0	0
Trigg	0	0	1	1
Trimble	0	0	0	0
Union	0	1	0	0
Warren-Edmonson	0	4	2	1
Washington	0	1	0	0
Wayne	0	2	3	1
Webster	0	0	0	0
Whitley	1	1	1	1
Wolfe	1	0	0	0
Woodford	2	0	0	0
	81	105	166	122

Respectfully submitted,

L. H. SOUTH.

NEWS ITEMS AND COMMENTS

WHOLESOMENESS AND ECONOMY.

The Nation is at war. To protect our rights we must have an efficient fighting machine. The men must be given wholesome and nutritious food in sufficient quantity. The stupendous character of the conflict necessitates rigid economy of both men and material. Nothing is economy that renders food less wholesome, but there is no excuse for catering to prejudice at an increased cost. We shall need all our dollars before this war is over. We must secure for our soldiers the most wholesome food at the least cost.

Our governmental departments are subject to criticism by the whole country, and it would not be surprising if they catered to known prejudice in order to avoid annoying criticism. But in time of war we must be governed by scientific facts and not by prejudice. Big interests whose advantage lies in the support of a prejudice may criticize, but our leaders must be big enough to practice economy in spite of such unjust criticism. That economy will be practiced and that scientific facts and not prejudice will guide the government in the selection of wholesome foods is clearly indicated by recent actions by the Department of the Interior, the Army, and the Navy. All the departments have recognized the findings of the Referee Board of Scientific Experts who found that alum baking powders were as healthful as any other baking powders. These departments have recently purchased large quantities of alum phosphate baking powders. This is the type which was furnished our soldiers on the Mexican Border and subsequently to our sailors which proved so satisfactory. The people of the United States have recognized the wholesomeness and economy of this type of baking powder for years. Eighty per cent of the baking powder used in the United States contains alum. Its wholesomeness is unquestioned. Its economy is marked. Not only are alum powders generally much stronger, so strong that the manufacturers recommend the use of only half

the quantity called for by high priced baking powders, but the price of the powder pound for pound is but half as much. This means that the use of one pound of phosphate alum powder at 25 cents does the work of two pounds of the other powders costing one dollar. The saving is 75 cents. War prices would have no terrors if we could make an equal saving on all our foods by substituting something equally wholesome, twice as effective and at half the price.

Dr. J. A. H. Miller, aged 57, a prominent Princeton physician, and district surgeon of the Illinois Central railroad, died unexpectedly in Louisville, June 8, 1917. Bright's disease was the cause of death, and he had been in Louisville for treatment about one week.

Dr. Scott Goodpaster, of Owingsville, formerly of Mt. Sterling, has been accepted in the Medical Corps of the Army and left for New York, from which port he will shortly sail for France. After he becomes permanently situated he will be joined by his wife who will assist in nursing the wounded.

Dr. J. Cray Martin, of Carlisle, left for New York City on July 6th and will return about September 1st. While gone he will devote his time to medical research work at the various hospital clinics.

Edgar W. Northeutt, a prominent young physician of Covington, has gone to Rochester, Minnesota, to take a private course in surgery under the Mayo Brothers, who have an international reputation as surgeons. Dr. Northeutt is a Boone county boy and the people here should be proud of him.

Dr. H. E. Prather, of Hickman, county health officer, went to Bowling Green recently for the purpose of enlisting and taking an examination as a member of the U. S. Medical Reserve, subject to call when needed. Dr. Prather is an enthusiastic, patriotic, red-blooded American, willing to make any sacrifice for the honor and success of American arms.

Dr. C. P. Price, being the first commissioned officer to be called from Mercer county to army service, has been presented with a handsome Kentucky thoroughbred horse, with saddle and bridle, by his many friends and admirers. Lieut. Price has gone to Ft. Riley, Kan.

It will be unwelcome news to his many friends to learn that Dr. G. N. Cox, of Mt. Sterling, has received word that his application for entrance into the Medical Corps of the Army has been rejected because of physical defects only. His son, Neale, who underwent an examination last week for entrance into the Marine Corps, has also been rejected because he was not old enough.

In spite of his rejection Dr. Cox has set an example for patriotism which cannot be excelled.

He has two sons in the army, a third is preparing, a fourth was rejected for the above reason and he himself offered his services in a professional capacity and made every effort to be accepted.

One of the most successful, certainly the most enjoyable meeting ever held by any society or body of people was that of the Kentucky Valley Medical Association which met in Jackson, July 13th and 14th. The agreed and expressed opinion on all sides, those resident and those visiting is that it was a success from start to finish and all are pleased and patting themselves on the back because it was so.

Again we say this was likely the best meeting this old and respectable society has held because when once before it met in Jackson it had the most lamentable failure of its history because of lack of co-operation of the citizens and this was due to an entire absence of appreciation of the resident physicians, who taking no interest or part themselves of course did nothing to awaken the people of the town to their responsibilities and to their power to make it a failure or a success. But it chanced that a live wire in the person of Dr. Wilgus Bach, went to the Mid-winter meeting at Richmond and by his industry and tact got the Mid-summer meeting called for Jackson and while the complete success of the whole affair is very largely due to Dr. Bach, it is only fair to say that the resident physicians rallied to his aid and put it over in a way that brings words of commendation to them and great things for the future. Suffice it to say, they came 37 of them, they saw and they conquered and according to their own confessions publicly and privately they were conquered. The address of welcome made at the Baptist church was by ex-Senator E. E. Hogg, following the invocation by Rev. Pollitt and the response was made on behalf of the visiting doctors by William Benjamin McClure of Lexington. The Punch Bowl presided over by Elizabeth Pratt and Nancye Sewell assisted in the making by some of the good ladies of the town was a thing not to be resisted and the banquet at the Jefferson Friday night was the biggest thing likely ever pulled off in the town. The speeches were numerous, short and all to the point and the friendly feeling that goes so far to make a success in things of this kind was everywhere prevalent.

The Kentucky Valley Medical Association meets next year at Torrent, Ky., about July 1. Officers elected were: President, Dr. T. H. Holloway, Hazard; Vice President, Dr. G. F. Doyle, Winchester; Secretary-Treasurer, Dr. Luther Bach, Jackson. There were 48 physicians and surgeons present at this meeting. The greater number present on Friday. Drs. Bach and Barrow gave excellent lectures on Saturday, while

Drs. Doyle, Marks, Kinnaird, Shirley, Vane and McMullen gave addresses which were freely discussed and all papers were said to be among the best ever given at a K. M. A., meeting. On Friday evening Dr. Carl Wheeler gave a lecture and showed pictures that were never before a medical body except in New York two weeks ago.

Dr. Irl Thomas, of Pembroke, received notice this week that he had been accepted in the reserve corps of the army, and that he would receive his commission in a few days. Dr. Thomas applied for enlistment in the medical corps, but failed to pass the physical examination, being three pounds too light.

Dr. Thomas Palmer Satterwhite, long one of the foremost surgeons of the South, and a former vice president of the American Medical Association, died at his home here of paralysis. Dr. Satterwhite had made his home in Louisville the greater part of his life. He was elected vice president of the American Medical Association in 1895. Dr. Satterwhite was 82 years old.

Dr. W. C. Caywood, who for some time has been in Frankfort, as physician at the State Penitentiary, will return with his family to Winchester.

The Government has selected Dr. B. C. Wilson, of Clarkson, as the Surgeon-member of the County Board of Registration appointed to execute the new selective Draft law in the county.

Dr. Charles M. Gower, of Trenton, has been notified by the adjutant general's office that his examination was satisfactory and that he will be commissioned a first lieutenant in the Medical Reserve Corps. Dr. Gower saw service in the Spanish-American War and is one of the leading physicians of his home county.

Dr. David Barrow, of Lexington, has been commissioned to organize a base hospital unit for service in France. Information received here is to the effect that about twenty doctors will be enrolled, all of whom, it is expected will come from the Fayette County Medical Association. Sixty nurses will accompany the unit. Dr. Barrow tendered his services to the War Department some time ago and has renewed his efforts which have finally met with success.

Dr. Ben F. VanMeter one of the first Lexington physicians to offer his services to the government, has been commissioned a major in the medical corps of the army. Dr. Van Meter is a veteran of the Spanish-American war, having served three years as an army surgeon.

Dr. M. M. Moss, of Bowling Green, who recently was commissioned First Lieutenant in the

medical department of the U. S. army, has reported at Fort Oglethorpe, at Chickamauga, for assignment.

The Christian County Medical society, at their last meeting, authorized the purchase of a liberty bond out of the funds in the treasury. The doctors are loyally supporting the government as they had already volunteered their services as an organization, for such service as they might be called on to perform.

Thirty-six physicians were examined at Paducah by Maj. A. T. McCormack, of Bowling Green, and his assistants, for commissions in the Medical Reserve Corps of the army. Of these the greater number were from Graves county. Two were from Paducah.

Dr. B. T. Arnett, of Anton, has been selected by the medical fraternity of Hopkins county as a suitable man for a position in the medical corps of the United States. The doctor has expressed a willingness, if called upon, to go to the front and serve his country. He has made a splendid reputation as a physician and one well worthy a position in the army.

Dr. Carlyle Moss, of Rockfield has assumed charge of St. Joseph's Hospital, Bowling Green, during the absence of Dr. M. M. Moss, who is stationed at Fort Oglethorpe, Ga.

The war has given a tremendous importance to the whole subject of diet. Food ranks almost with bullets as a vital factor in the great struggle, and efficient utilization of the crops is just as necessary as big harvests. The Carnegie Institute of Boston is to conduct a series of experiments this fall to demonstrate whether men and women cannot maintain their powers on a smaller ration that has hitherto been accepted as the minimum. The Battle Creek Sanitarium has just finished a metabolism experiment lasting forty-five days, with ten subjects. The object was to determine the effect of different diets on the chemical composition of the blood. The results have not yet been tabulated.

PROFESSIONAL PERSONNEL OF HOSPITAL UNIT D, IN CONNECTION WITH LOUISVILLE CITY HOSPITAL.

Organizer—L. S. McMurtry, M. D., Member National Committee American Red Cross.

Director—Irvin Lindenberger, M. D., Major.

Chiefs of Service—Charles Farmer, M. D., Captain, John B. Voor, M. D., Captain.

Staff Surgeons—Isaac A. Arnold, M. D., Captain; Elbert W. Jackson, M. D., First Lieutenant; Henry L. Pelle, M. D., First Lieutenant; Lamar W. Neblett, M. D., First Lieutenant.

Staff Physicians—Charles E. Gaupin, M. D.,

Captain; James H. Pritchett, M. D., First Lieutenant; George H. Day, M. D., First Lieutenant; Iliam S. Eggers, M. D., First Lieutenant.

Chief Nurse and about twenty nurses.

Enlisted personnel comprises about fifty men.

Dr. Robert F. McDaniel, who has been making his home at DeLand, Fla., for nearly two years, has been accepted for medical service in the U. S. army in France. Dr. McDaniel was ill when he left Hopkinsville, but his health has been completely restored. He not only passed an excellent physical test but was highly complimented by the medical board on his mental examination. Dr. McDaniel expects to leave in a short time for France. He is a Spanish-American war veteran.

The Graves County Medical Society met at Sedalia Thursday, August 9. There was a good program, which included an address by Hon. W. H. Hester on "The Call of Our Country." Boiled ham and fried chicken composed part of the menu.

Dr. Delia Caldwell, Paducah, who offered her services for the medical reserve corps of the United States army, has received a letter from Major R. B. Miller, of the medical corps at Washington, D. C., stating that for the present women physicians would not be accepted, although as the war proceeds they may be taken later. Dr. Caldwell was praised by the surgeon-general for her patriotism. She is the only female physician in Western Kentucky who applied for admission.

Dr. O. F. Miller, of Hopkinsville, together with seven other Homeopathic physicians, signed applications for the Officers Reserve Corps.

Dr. H. L. J. Hille, the well-known Roaring Spring physician, tendered his services to the government some weeks ago, but as the good Doctor had passed the age limit, he has not been called to the colors.

Miss Margaret Frost, community nurse, Mt. Sterling, has tendered her resignation to the Health and Welfare League and will go October 1 to join Dr. Barrows' hospital unit and sail for France. She was given a year's absence by the league, which declined to accept her resignation.

Dr. Stanley Stroube, a popular young South Christian physician, has enlisted in the United States medical corps.

Dr. Lydia Poage, of Paris, has joined the hospital corps being raised in Lexington by Dr. David Barrow. Mr. Clarence Harney, of Ruddles Mills, has in his application to join the same unit. The hospital corps is expected to go to France early in the fall.

Dr. J. E. Wilson, of Butler, received his commission last week as First Lieutenant in the Medical Reserve Corps. He is the first physician in the county to get a commission. Doctor Wilson has many friends in the county who will regret to see him leave. He is one of the best physicians in the state and just the kind of a man that the Government is always glad to get.

Dr. H. R. Henry and Dr. J. W. Ishmael, of Winchester, have gone to Rochester, Minn., to attend a surgical clinic at the Mayo hospital. They will attend a clinic in Chicago before returning home.

Dr. Ed Bogard, a former well-known physician of Golden Pond, who has been practicing his profession at Lilbourn, Mo., since leaving Trigg about three years ago, has recently joined the medical corps of the U. S. Army, and has been commissioned First Lieutenant. He is now in training at Fort Riley, Kansas.

Dr. Robert T. Pirtle, of Louisville, has reported for duty at Fort Oglethorpe, Ga.

Dr. and Mrs. O. R. Reesor entertained at a six o'clock dinner in honor of Lieutenant F. I. Buckner who is soon to depart to take up his duties under his commission received a short while ago.

The invited guests were the members of the Taylor County Medical Society whose felicitations in behalf of Dr. Buckner are deeply treasured by him and will be a source of great help in discharging his duties as a commissioned officer of the Medical Corps.

Dr. Wade Hampton Jefferson, of Cadiz, has received his commission making him a First Lieutenant in the medical service of the government.

Dr. R. W. Ogilvie of Princeton, Ky., arrived in France several days ago as a member of the medical corps of the American forces. He is the first physician from Western Kentucky to land in France.

Dr. Carroll Price, who has been commissioned a lieutenant in the Medical Corps, left July 19th for Fort Riley, Kansas. Before his departure he was presented with a handsome Kentucky thoroughbred, and saddle and bridle as a token of esteem from his friends in Harrodsburg.

Drs. Carl Norfleet and J. A. Bolin, who have been commissioned Captains in the Medical Officers Reserve Corps, have reported for duty at Fort Oglethorpe, Ga. Dr. S. F. Parker who has also been commissioned a Captain has received no orders to report yet.

The Warren County Medical Society met August 8 in the City Hall with a good representation of physicians present. Tuberculosis was the subject for discussion, and those who led were Drs. H. P. Cartwright, J. A. Grider and Lillian H. South.

Dr. W. B. Gossett, who holds a Captain's commission in the United States Army Medical Reserve Corps has received orders from the War Department to report at once at Fort Sam Houston, Texas. Other Louisville physicians who also received notification to report for duty are as follows: Lieut. Lee Ernstberger and Lieut. F. M. Walker, to report to the Sanitary Officer at Camp Taylor at once; Lieut. Fred L. Koontz and Lieut. R. T. Pirtle, to report at Fort Oglethorpe, Ga.

Other officers of the corps who are Louisville practitioners, including Drs. Fred Grunwald, W. L. Coolidge and John Richardson, have not received any orders from the War Department as yet, although they are expecting instructions at any hour.

Dr. Harry V. Johnson has received notice from Washington that he has successfully passed the examination and met all requirements and is accepted in the medical department of the United States Army and that he will be called as soon as the country needs him. This makes the second physician from Georgetown to be accepted, as Dr. Porter successfully passed the examination several weeks ago and received a similar notice.

Dr. P. H. Stewart and Dr. E. W. Jackson have received from Secretary of War Baker commissions in the medical department of the United States army. Dr. Stewart was made a captain and Dr. Jackson a lieutenant. The commissions were for a period of five years. Dr. Jackson, who is city physician, recently was appointed a lieutenant in the Louisville hospital unit. Dr. Horace T. Rivers, a prominent young physician, also has received a commission as captain.

Dr. G. H. Beckett, of Sunrise, recently offered his services to his country in the war, and has received his commission as First Lieutenant in the Reserve Corps of the United States army.

Dr. J. P. Wheeler, who recently passed a perfect examination in the U. S. Medical Corps, has been notified to report at Fort Oglethorpe, Ga.

Dr. B. Ramsey, one of the oldest citizens and physicians of Richmond, died at the residence of his son, B. Ramsey, Jr., July 18, and was buried at old Paint Lick. He was ninety-two years old.

Dr. John H. Blackburn, of Bowling Green, recently received an offer as chief of the surgical division of the cantonment hospital at Camp Lo-

gan, Texas, for immediate service. Dr. Blackburn immediately wired his acceptance and has gone to his new post at Houston. The appointment is considered a very desirable one in the medical service of the army.

Dr. W. A. Frogge, of Seventy-six, recently passed the State Board, and has been registered in Wayne county, as physician and surgeon. He will continue to be located at Seventy-six.

Dr. Sam R. Guthrie, of Franklin, has been commissioned First Lieutenant in the Medical Corps of the United States Army.

The Pendleton County Medical Society held its annual outing and picnic at the fair grounds July 20, 1917. The feature of the occasion was a big dinner of lamb and fish, with all the side-dishes that go with it.

Dr. H. C. Clark acted as toastmaster. This gifted after-dinner speaker was at his best, and presided with ease and grace. Dr. J. Edwin Wilson, Dr. J. F. Daugherty, Dr. N. B. Chipman and Dr. Jones responded to the toastmaster's call, and delivered happy little talks.

The wives of the physicians were guests of honor and helped to give to the outing.

Drs. Barkley of Lexington, and Daugherty, of Walton, were present and gave most interesting talks.

Dr. Earl Blackerby, of Bowling Green, field worker for the State Board of Health, gave an excellent talk on vital statistics.

He said that there had been four hundred births which had not been reported in the State, but he was proud to say that Pendleton county was only credited with two out of the four hundred.

This was the most enjoyable meeting the society ever held, and the committee in charge have the thanks of all the members.

Dr. F. I. Buckner, of Campbellsville, has received his commission as First Lieutenant in the Medical Section of the Officers Reserve Corps of the U. S. Army.

The Kentucky Midland Medical Association met in Lawrenceburg July 19, with a good attendance from Louisville, Lexington, Frankfort, Shelby and Woodford.

This association comprises fifteen or twenty counties in Central Kentucky.

Two papers were read one by Dr. J. W. Gilbert, of Lawrenceburg, on "Fractures" one by Dr. Wallace Frank, of Louisville, on "The Use of Radium." Both of these subjects were thoroughly discussed by the members present.

In the afternoon, Dr. Wheeler presented moving picture illustrations of certain diseases at the Lyric Theatre.

The members present all enjoyed a good dinner at the Hotel Champion and had a good time.

Dr. E. S. Stuart, the venerable Fairview physician whose beneficence is responsible for the Jennie Stuart Memorial hospital at Hopkinsville, on July 21st quietly celebrated his eighty-ninth birthday to-day at his home. Dr. Stuart is showing plainly the weight of his years, but still enjoying good health and able to walk down town in Fairview.

The hospital which Dr. Stuart has given to Hopkinsville has proven to be one of the greatest boons possible to suffering humanity. The splendid service it makes possible has been the mean of saving many lives.

The Mercer County Medical Society passed resolutions at a meeting recently condemning and refusing membership to any surgeon or physician who locates in any part of Mercer county during the war and also pledging themselves to look after the practice of their fellow-physicians who apply for service in the Medical Reserve Corps or enlist otherwise in the army, and to turn their practice back to them when they return from the war. This step was taken because a number of local physicians have applied for service and others expect to do so. Among the Mercer physicians already called are Dr. C. P. Price, Ft. Riley, Kan.; Dr. T. C. Bell, stationed in Louisville. Dr. William Goddard, at the French Hospital, New York city; Dr. Hunter Coleman, Cincinnati.

Preliminary Vital Statistics report for six months ending June 30, 1917:

Kentucky Population2,425,460
Total Death (stillbirths excluded) 17,245,

rate14.2

Important Ages

Under 1 year2,790
1 to 5 years1,356
65 years and over4,634

Important Cause of Death

Tuberculosis (all forms) 2,319, rate191.1
Pneumonia — Bronchopneumonia 2,014,

rate166.1

Whooping cough, 180, rate 14.8

Diphtheria—Croup 122, rate 10.1

Scarlet fever 17, rate 1.4

Meningitis, non-tubercular 276, rate 22.7

Measles 674, rate 55.5

Typhoid fever 180, rate 14.8

Diarrhoea—enteritis (under 2 years) 279,
rate 23.0

Diarrhoea—dysentery (over 2 years) 129,
rate 10.6

Hookworm disease 6, rate5

Influenza (grippe) 425, rate 35.0

Puerperal septicemia 88, rate 7.2

Cancer 559, rate 46.1

Violence 860, rate 70.9

Pellagra 60, rate 4.9

Malaria 40, rate 3.3

Infant Paralysis 15, rate 1.2

Syphilis 61, rate 5.0

Miss Jessie O. Yancey, former county superintendent of the Mason county schools, has been made field secretary of the Kentucky Health and Welfare League. The appointment is indeed a happy one and the league has been fortunate in securing such a talented woman for this all-important work. Miss Yancey will make Bowling Green and Frankfort her headquarters. Most of her time will, however, be devoted to traveling over the State. As field secretary of the league she will visit every county in the State with a view of encouraging county health and welfare work and will assist in organizing leagues in each county. Already there are now some twenty leagues formed in the State. She will deliver lectures to parent-teachers' association, Women's clubs, chautauqua audiences, before schools and will continue to organize junior health leagues and will carry on an active campaign for the prevention of tuberculosis and other preventable diseases.

“The great fact that stands out above all the rest is that this is a Peoples' War, a war for freedom and justice and self-government amongst all the nations of the world, a war to make the world safe for the peoples who live upon it and have made it their own, the German people themselves included; and that with us rests the choice to break through all these hypocrisies and patent cheats and masks of brute force and help set the world free, or else stand aside and let it be dominated a long age through by sheer weight of arms and the arbitrary choices of self-constituted masters, by the nation which can maintain the biggest armies and the most irresistible armaments—a power to which the world has afforded no parallel and in the face of which political freedom must wither and perish.”—Woodrow Wilson, President of the United States.

Radiography in Uterine Hemorrhage of Benign Origin.—Dr. John G. Clark, of Philadelphia, said that in cases of hemorrhage of the uterus of benign origin, such as that from small myomata or myopathic change, particularly in women over thirty-eight years of age, radium in small doses was one of the most effective remedies, relieving practically all of the cases from even the slight hazard to a major surgical operation. The hemorrhages in such cases stopped promptly and with rare exceptions permanently without untoward effects incident to the use of radium. Analysis of cases according to age indicated that those near the menopause responded best. Cases in former years, in which even repeated curettages failed to alleviate the hemorrhage, were promptly terminated after the application of fifty milligramms of radium for twenty-four hours. In over 100 cases there had been but one failure to relieve the hemorrhagic symptoms.

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W. H. LONG*Louisville*NEXT MEETING STATE ASSOCIATION,
LOUISVILLE, OCT. 16, 17, 18 and 19, 1917

COUNTY SOCIETY REPORTS

Barren—The annual social meeting of the Barren County Medical Society was held in Glasgow, July 18th, 1917.

Members present: Acton, Porter, C. C. Turner, E. D. Turner, Siddens, Botts, Taylor, Howard, Miller, Palmore, Gowdy, Carroll, Ferguson, York, and Smock.

Visitors: F. Edwards, Horse Cave; J. J. Adams, Bruce; E. F. Taylor, Liletown; C. A. Calvert, Scottsville; Dr. E. Motley, Plymouth, Ohio; O. P. Nuckols, Pineville; W. A. Bolling, Louisville; H. M. Meredith, Scottsville, Maj. A. T. McCormack, B. P. Curry, Dr. Lillian South, and Fred Cartwright, Bowling Green; J. K. Hutcherson, University of Louisville, and others whose names the writer failed to get.

During the temporary absence of President Miller, E. D. Turner occupied the chair.

Minutes of the previous meeting were read and approved.

Visiting physicians and nurses were invited to seats as honorary members.

In response to call for clinical reports, several interesting cases were reported and briefly discussed.

John B. White sent in a splendid paper on Typhoid Fever, which was read by Dr. Howard. Dr. White being prevented by illness from attending the meeting. The paper was highly appreciated, and received many flattering comments. There was a general discussion of typhoid fever, visiting members participating.

The Committee on Program, and Arrangement made their reports and were discharged.

Adjourned to meet at the Christian Church at 1:30 P. M.

The noon hour was delightfully spent by our members and guests at the Murrell Hotel, where a fine dinner had been prepared for the occasion. The day will long be remembered for its pleasant associations, made more enjoyable by the presence of a number of ladies who added their charm to the occasion.

Afternoon

The society was called to order at 2 o'clock P. M., by President Miller, who presided with becoming dignity, introducing the speakers with short talks, interspersed with pleasantries and witticisms.

C. P. Nuckols, of Pineville, delivered a splendid address on "The Invisible World About Us." He evidently knew his subject, and got over technicalities in a style that was pleasing to his audience, an art which all scientific lecturers do not possess. All were convinced that his position on sanitary matters is unassailable, and that if doctors and the laity would do their full duty, the good results would be beyond calculation.

Maj. A. T. McCormack was the next speaker introduced, who entertained the audience for

some time in his usual forceful style. Of course he could not keep off the subject of State Medicine if he were to try and it goes without saying that he has advanced ideas on everything pertaining to sanitation. He also discussed the doctor's duty as to army service. He believed that prudence as well as patriotism should prompt every physician within the age limit to offer in the proper way, his services to the Government.

F. D. Cartwright, P. D. Curry and **Lillian South**, of Bowling Green, in response to calls gave short talks, and each was listened to with marked interest.

Dr. South's address deserves special mention. Though short and unpretentious, it proved that her reputation as a scientist and sanitarian rests on sure ground.

Last but not least was a very eloquent address by **Pastor E. W. Elliott**, proving that it is our religious duty to do all in our power to prevent the spread of tuberculosis and other germ diseases. Though not professing to be a medical man, he nevertheless proved to be well posted on medical subjects; and his appeal for more and harder work for the relief of suffering humanity was strong and convincing. Thanks! Brother Elliott.

Evening Session.

A large audience assembled at the Christian Church, and at 8 o'clock P. M., President Miller called the society to order, and proceeded to explain the object of the meeting, thanking on behalf of the society, the audience for their presence, the ladies, especially of the Mothers' Club, for their active interest in our society work, and Brother Elliott and the Christian Church for courtesies shown during these meetings.

Next on the program was the reading by **J. M. Taylor** of some verse which the Committee courteously called "Poetry," the title being "The Woodman." The Audience having been assured that the reader was doing the best he could, listened to the recital with commendable patience and tolerance.

W. A. Bolling, Louisville, was the next and last on the program and gave a very able lecture on Tuberculin, a product which many hope will eventually prove of the greatest value in stamping out our greatest enemy, the Great White Plague. His lecture, though highly technical, was illustrated by lantern slides, and was fairly well understood by his auditors. As an interesting and pleasing lecturer on scientific subjects, Dr. Bolling has no superior. That he has awakened more and deeper interest in tuberculosis, among our people, there is no doubt.

In declaring the meeting dismissed, the President said "Come again to our annual social meeting a year hence, and we will try to entertain you better provided we are not all in the trenches."

Adjourned.

J. MORGAN TAYLOR, Secretary.

Campbell-Kenton—Thursday, July 12th was a day for the members of the Campbell-Kenton County Medical Society. Forgetting business cares and the worries of the practice of medicine for the day, the members of Campbell-Kenton with their wives and children went out to Col. Tom Cody's farm on the Dixie Highway and had a glorious time.

Even nature helped to add to the joyousness of the occasion. The day was slightly cloudy, but the sunshine now and then forced itself between the lofty beeches to see that all were enjoying themselves.

The Second Kentucky Band in khaki uniforms furnished music all the day. Those who cared to, danced; some of the older members played indoor base-ball, while the real old ones, pitched quoits or played poker. Lunch was served all day long. Caldrons of burgoo steamed over log fires; boilers filled with corn in the shuck were ever on hand and a big pan of molten butter, which was applied to the corn with a sterilized brush made old "Hi Cost" look sick.

Broiled steak, roasted lamb, sausage; and in the drink line mint juleps, beer and buttermilk made one think "well what's the use of going back to town, when life can be so well lived in the country."

Toward evening as the sun began to tire and sink into the golden west, "Old Glory" was saired to the tune of the "Star Spangled Banner."

The day was voted by all present the most enjoyable ever spent by Campbell-Kenton and it being the earnest desire of all present to make the occasion an annual affair.

PROGRAMME

10:30 A. M.—Invocation, "Close thine eyes for this one day."—Rev. W. W. Anderson, D. D., M. D.

Ukulele Solo, by Prof. J. R. Murnan (Late member of Hawaiian Band.)

11:00 A. M.—Sleight-of-Hand Tricks by the following artists: Drs. Wilson, Cutler, Brown, Bonar and Shannon. (Watch your pockets.)

12:00 M.—Drinks (hot or cold, hard or soft.)

PROBLEM:

Mint Julep High-ball Burgoo

—WHAT?

Broiled Steak Mushrooms

Answer—Dr. Quick; Stomach Pump; Emetics; Lavage; Rest and Good Resolutions.

12:30 P. M.—Catching Greasy Pig. Drs. J. A. Davis, Menefee, Ellis, Smith, Claude Youtsey, Hafer, Gould and Shaw.

1:00 P. M.—Song. "Three darling SOJER BOYS are we," by Drs. Phythian, Ryan and Heisel.

1:30—Climbing Greasy Pole. Contestants: Drs. J. R. Meek, R. L. Bird, John Todd and P. G. Kenney.

2:00 P. M.—Song by the Famous Sextet, "Where hast thou been my dear JIMMY," by JIM Youtsey, JIM Davis, JIM Digby,

JIM Ryan, JIM O'Maley and JIM Averdick.
2:15 P. M.—Flag Raising.

2:30 P. M.—Essay entitled, "My View-point on the Alcohol Question" by Dr. George Adolph Hermann.

3:00 P. M.—Hoop-Skirt Dance, by PAP Youtsey, PAP Jenkins and PAP Keeney.

3:30 P. M.—Pie-eating Contest, by the following artists: Drs. Stine, Gerding, Glenn, McKim, Meier, Tate, Molloy, Heidingsfeld, Caldwell Twins, Fishback, Rankin and Suter.

4:00 P. M.—Fancy Dancing, by Dr. Jephtha Davis and Col. Tom Cody.

4:30 P. M.—Vocal Duet entitled "Two Strapping Big Men Are We," Drs. Walters and Garrison.

(At this point, the most unphoepossessing individual of the masculine gender weighted down with no less than two college degrees will be awarded a prize.)

Committee: Drs. Senour, Zimmerman, Frickman, Stine and Gerding.

5:00 P. M.—SONG BY ALL PRESENT, "Jolly Little Boys and Girls Are We." Words by Tobe Widrig, Music by Fred Blesi.

THOS. J. GLENN, Secretary.

Franklin—The Franklin County Medical Society met in regular session with Dr. J. T. Dorsey as host on a river excursion and fish fry at Gardner's Landing on the Kentucky river, at which time the doctor had invited the Woodford county society and the druggists of both counties, their wives or sweethearts and the nurses of both counties. The excursion boat left Frankfort at 5 P. M., with the county contingent of fifty-one guests and met a like number at the landing in Woodford county, where a most elegant and bountiful supply of Kentucky river fish, cooked on the ground and well served with corn pone and coffee. After which the boat continued up the river a short distance, music and dancing added to the social feature, returning reached Frankfort at 10 P. M.

The meeting was called to order on board the boat by Vice President Roemele. Minutes of the past meeting approved. The censors reported favorably on the petition for membership of Dr. Sleet, physician in charge of the State Reformatory and on motion was unanimously elected to membership. The committee appointed at the June meeting to revise the scale of charges for services of the members of the Franklin County Medical Society was then reported, read and discussed and was unanimously adopted.

Scale of Charges for the Franklin County Medical Society.

(1). Office prescriptions and examinations, \$1.00 "and up"—this is to mean a reasonable charge in addition to regular fees for extra services or detention.

(2). For a day visit in city or within two miles of court house, \$2.00.

(3). For a night visit, \$1.00 additional "and up."

(4). County calls, \$2.00 if within two miles of court house and each additional mile 50 cents "and up".

(5). Obstetric fees a minimum charge of \$20.00 "and up."

(6). Sputum examination for tuberculosis or diphtheria or urinary, \$1.50 each.

(7). Microscopic and X-ray examinations, such fees as may be agreed upon by the physicians and specialist. A night visit shall be considered all calls from 9 P. M. to 7 A. M.

Respectfully submitted,

L. T. MINISH,

C. A. FISH,

G. H. HEILMAN.

Committee.

Before landing a vote of thanks was tendered to Dr. Dorsey and his estimable wife for their enjoyable entertainment by a rising vote and three cheers and a tiger.

Adjourned.

U. V. WILLIAMS, Secretary.

Franklin—The Franklin County Medical Society met in special session with N. M. Garrett as host. Present, Jno. G. South, presiding; Drs. Fish, Coleman, Mastin, Dorsey, Garrett. Owing to a social function on the river in the interest of Suffrage, only a few doctors were present. Minutes of previous meeting and Round Table discussion postponed till the next regular meeting.

Clinical cases with an interesting discussion by those present was then had, after which an elegant repast was served by Mrs. Garrett for which a vote of thanks was unanimously adopted.

Adjourned.

F. W. MASTIN, Secretary pro tem.

Green—The Green County Medical Society met in the office of O. H. Shively, June 7th, J. C. Graham was elected President; E. F. Taylor, Vice President; O. H. Shively, Secretary. After the election of officers the members present discussed the present fee system. It was decided that on account of the high cost of living the physicians fees should be increased accordingly. A schedule was then arranged. The society agreed to meet on the first Thursday in September and November.

O. H. SHIVELY, Secretary.

Lobelia is a drug dreaded by those who have not learned to know it, utilized in a very wide range of cases by those to whom it has become familiar by actual use.—Am. Jour. Clin. Med.

We all tend to move along the lines of least resistance. In the case of goiter, it seems easiest to ship the patient off to Rochester, Minn., with our best wishes for the results.—A. J. C. M.

THE FORUM

TO THE EDITOR:

A long time has elapsed since I "pushed" a pencil into "The Forum." I have no new ideas to distribute now, only a longing desire to commune with brethren from whom I have been separated, lo, these many years, so long—it seems to me—the memory of man runneth not to the contrary. Life's circumstances would seem pretty much as one makes them. Between Scylla on the right and Charybdis on the left, runs the channel. If the rock beaches, or the whirlpool engulfs, the fault will most likely be found in our steering; fewer wrecks are to be attributed to the elements than to navigators. A man must breathe the atmosphere with which he surrounds himself, be it of roses or miasm. The season of old age has, in God's harmony, no more of barrenness in it than has that of fresh boyhood or vigorous adult life. At least this is what an aged gentleman tells me—I have no personal experience in that line. Anyhow, my dear Editor, let me confide to you that I am still in the "harness." Habit is a cable; we weave a thread of it every day and at last we cannot break it. I know what pleasure is, for I have done good work.

I have gotten along amicably with our neighbors and friends, the Laterday Saints; better, perhaps, because of having access, daily, to an Irishman's dictionary. A fine book it is, containing, among other good things, such big words as "comity of manners," "tact," "blarney," and "you bet." The latter is a colloquialism that "hits the spot" and is fine for everyday use, among even the most polite society. It is a pet of mine. The Mormons, as a class, are worthy people, with but few exceptions. They are on a par with other cults and religions and possesses an attribute that is most commendable in the optics of the doctor—they pay his bill, are appreciative and send for him when his services are needed. What more need you want? I came here twelve years ago with my head full of grand projects, many of which burst, one after another, like so many soap bubbles, without leaving me so much as the froth. Before learning the game, I bought on the "Exchange," mining stocks with ducats I had not stolen, nor gotten otherwise, illegally. Then I was a tenderfoot, the schooling was fine for me and joy enough into the bargain. Some men are like persimmons—it takes a lot of frost to sweeten them. Now, I am past the bounds of freakish youth, but strong for service still and unimpaired. It is hardly worth while to state that I recouped on the mining stock losses, very becomingly. If to-day were even all of life, getting over-riches would not be wisdom: it is as bad for a doctor to be too

rich as to be too poor—bad for himself: the channel is between.

Do not infer that while here in this great quartz mining camp, in the far west, that I have been serving Mammon for Mammon's sake. "For the love of Moike," no. I have been in pursuit of the necessities, only, to acquire a "Futurity-stake," and, just now to buy a Liberty Bond.

"There is," said Kant in one of his strictures, "a considerable difference between thinking we possess a hundred dollars and possessing them. We know that everybody is not happy. If everybody were contented, this old world would be a dead one. There is a reason! De Morgan in his "Budget of Paradoxes" meets the situation rather well in this:

Great fleas have little fleas upon their backs to bite 'em,

And little fleas have lesser fleas, and so on ad infinitum.

And the great fleas themselves, in turn have greater fleas to go on;

While these again have greater still, and greater still, and so on.

Do you savvey?

Utah is a great state with a multiplicity of riches. Its mountains are veritable beehives of precious metals; the valleys are fertile, with plenty of water for irrigation; bountiful crops are always assured, annually. No one has ever seen, anywhere, finer fruits or more beautiful flowers. Salt Lake City is, incomparably, the handsomest "burg" in the West. The Tintic mining region, in which we live, embracing not more than seven thousand souls, supports, or rather "sports" more than three hundred auto cars. Miners have fairly good wages, varying from \$4.00 to \$5.50 for an eight-hour shift. Metals are high; sure, it is the mine owner's opportunity. The tuberculosis death rate is the lowest of any state in the Union. It has, also, the distinction of having the smallest percentage of illiteracy of any of the states. It is most patriotic, too. From this town we have had more than forty volunteers, in April last, for the Navy and Army. According to population it gave more to the Red Cross (\$524,000.00) than any other state. It is very up-to-date in every particular, and does nothing by halves. Without doubt it is the greatest fun and frolic country on top o' dirt. Dancing is the card-up-the-sleeve in all mining camps. We all confess to a liking for rag time, or syncopation, believing that through it will be hastened the coming of the Great American Opera, and the American Symphony, about which so many people are worried. We would like to add to every conservatory curriculum a chair of rag time. With all these virtues, Utah is not the equal of my sireland. You bet!

It came to me in the night watches of last

week, that in the merry month of June a jubilee of years had rolled around since I first took office—nabbed unexpectedly—in the great Kentucky State Medical Society. It was at Crab Orchard Springs. The weather was delightful, the crowd a good one for those days. The meeting was called to order by the president. The secretary failed to respond, nor did he send his books. My friend, Dr. McMurtry, arose and in his inimitable manner, offered my name in nomination for secretary. I was elected then and there and for eighteen consecutive years retained the portfolio. Did I do my duty—everything for the honor and glory and profit of the society? Let the echo answer. Think for a moment of the changes—in its personnel especially—which have taken place between the present and the year 1884. Wonderful, manifold! It brings tears to my eyes to contemplate it. How many old recollections and dormant sympathies are awakened! So the world goes! So the stream flows! Yet, there is a fellow, whom nobody knows, who makes all free on land and sea, and forces the rich and the poor alike to flee—The Leveller. Barring the accidents, against which nothing finite is guaranteed, I hope on some good day to see those who were at the C. O. Spa and witnessed my initiation. How I wish all were yet in the flesh with faculties intact that we might harrow old times. Will you not turn back the dial? How sweet 'twould be to take a trip and never have to give a tip, down to old Kaintuck; there to laugh with the sunshine and tremble with the storm, complain because it's chilly now, and then because it's warm, with nobody to nag us. Wouldn't it be great?

I look forward with pleasure to the coming of the JOURNAL, and read it with avidity. It gives me a pleasing, sociable feeling, just like getting money from home. I see it is flourishing like the green bay and is as handsome in its "make-up" as a Poinsettia. Thanks to the editor and his coterie of able helpers. I am grieved, or rather peeved, that I do not oftener see the name of my old county in the monthly "write-ups." Her inkpot appears to have gone bone dry. I know many a hen has lost her egg by cackling too soon, yet to lie dormant, when other counties are up and doing, is not the proper caper for gentlemen of the type to be found in Lincoln. If there be friction, try to be like Mrs. Wiggs, whose practice it was to put all her worries down in the bottom of her heart, then set on the lid and smile. Let each help the other. Every good deed you do to a fellow being is a jewel in the crown to be worn hereafter. I am proud of the JOURNAL.

The weather is a subject always in season. We wish we could write a pretty little ditty on the pretty little wind that has been blow-

ing so fiercely, recently—a genuine chinook. The sun comes up and the sun goes down, and the day and night are the same as one. There is nothing like getting used to the desert. However, it is safer and saner just now to endure it than to go down in ships to the seas—a hundred ships are the same as one to a submarine.

We haven't eyes enough to know creation's plan, but the impression prevails that the wheat supply from the arid lands in this part of the moral vineyard, will be a hummer, enough for home and to spare, and which may cross the "briny deep" to feed the needy.

All is well at the Tintic Hospital. Dr. Bailey, Jr., is a member of the Registration Board for Juab county. After this service is over, and mobilization of the western troops is accomplished, he will be ready for the French front, with his brass buttons. He has accepted a surgeency.

Haven't I been too prolix? Prudence is common sense well trained, so I will "cut it out" lest I give you trouble, and trouble is one thing which we wish to escape, but which we keep chasing, just the same.

Here are earnings for my first love—my heart quivers in that first ecstasy.

I am thine,

STEELE BAILEY.

Mammoth, Utah, June 30, 1917.

BOOK REVIEWS

Eye, Ear, Nose and Throat, Volume II of the Practical Medical Series—Comprising ten volumes on the Year's Progress in Medicine and Surgery Under General Editorial charge of Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Edited by Casey Wood, Albert H. Andrews and George E. Shambaugh. The Year Book Publishers, Chicago. Price \$1.50. Price of the series of ten volumes \$10.00. Although written by specialists these books are of great interest to the general practitioner. Under diseases of the eye the visual standards used in medical examination of recruits in the British army and in the continental armies is thoroughly described. The chapters on the Ear are translated from French and German authors. Diseases of the Nose and Throat are given due consideration and contain many illustrations.

Medical and Surgical Reports of the Episcopal Hospital, Volume IV.—Published by Wm. J. Doran.

A collected set of reports and papers compiled by the staff of the hospital, abundantly illustrated and very valuable to the surgeon and practitioner.

The Mastery of Nervousness—Based upon the re-education of self. By Robert S. Carroll, M. D., Medical Director Highland Hospital Asheville, N. C. The man or woman, suffering from nervous debility, will find this book an ever ready, practical help in the way back to health. Dr. Carroll gives in simple, fluent language, apt in expression, the causes of nervousness, its relation to contemporary conditions of living and efficient methods to overcome it. The physician who recommends this work to his patient will find it a valuable assistant to supplement his treatment. MacMillan Company, New York, Publishers.

International Clinics.—A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by H. R. M. Landis, M. D., Philadelphia, with the collaboration of Chas. H. Mayo, Rochester; Sir Wm. Osler, Bart., M. D., F. R. S., Oxford; Frank Billings, M. D., Chicago; A. McPhedran, Toronto; J. W. Ballantyne, M. D., Edinburgh; Arthur F. Beifeld, M. D., Chicago; Rupert Blue, M. D., D. P. H., Washington, D. C.; John G. Clark, M. D., Philadelphia; James J. Walsh, M. D., New York; Charles Greene Cumston, M. D., Geneva; Richard Kretz, M. D., Vienna, with correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Geneva. Volumes I, II, III, IV, Twenty-Seventh Series, 1917. Philadelphia and London. J. B. Lippincott Company. Price, each, \$2.00.

Medical Clinics of Chicago.—Issued serially, one octavo of 200 pages, illustrated, every other month. Per Clinic Year (July to May), six volumes. Cloth, \$12.00 net.

These bi-monthly publications are devoted exclusively to Clinical Internal Medicine in all its departments. They give you bedside and amphitheater teachings of such leading Chicago internists as Mix, Tivnen, Williamson, Hamburger, Mamill, Preble, Pussey, Tice, Abt. and Goodkind, representing such large hospitals as Mercv, Cook County, St. Luke's Michael Reese, and Sarah Morris Memorial, with their wealth and diversity of clinical material. The widest variety of cases is included, bringing out forcibly every feature of history-taking, diagnosis, treatment, and general management. The cases are illustrated with X-ray pictures, photographs, pulse-tracings, and temperature charts; the technique of all laboratory tests is given in detail, and every aid that can serve to make the diagnosis and treatment of the cases thoroughly clear to the general practitioner is emphasized. The publications are clinical in the strictest sense—diagnosis and treatment as actually practiced.

Urology, Diseases of the Urinary Organs Diseases of the Male Genital Organs, The Venereal Diseases.—By Edward L. Keys, Jr., M. D., Ph. D., Professor of Urology Cornell University Medical College; Surgeon to St. Vincent's and Urologist to Bellevue Hospital. With two hundred and four illustrations in the text. D. Appleton and Company, Publishers, New York and London, 1917. Second Edition.

Urology has made such rapid advance that new books on the subject are always welcome. The present volume is founded much more on the author's clinical experience than its predecessor. Chapters on Cystoscopy, Radiography, Renal Function, Tests, Renal Infections and Tuberculosis have been rewritten throughout. In discussing the subject of Gonorrhea, Prostatism, Syphilis and many operations upon the urinary organs many additions have been made.

The chapter on Gonorrhea in the Female is especially instructive.

Collected Papers of the Mayo Clinic, Rochester, Minnesota.—Volume VIII, 1916. W. B. Saunders Company, Publishers. Price \$6.00.

The contents of this volume are devoted to disease of the alimentary canal, urogenital organs, ductless glands, blood, head, trunk and extremities, technic and general discussion.

Dr. E. C. Rosenon, E. B. Towne and G. N. Wheeler have a very interesting monogram on Bacteriological Observations of Epidemic Poliomyelitis. They describe as the causative agent a minute streptococci.

The Treatment of Emergencies—By Hubley R. Owens, M. D., Surgeon to the Philadelphia General Hospital Assistant Surgeon to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. Chief Surgeon to the Philadelphia Police and Fire Bureaus; Assistant Surgeon Medical Reserve Corps, U. S. Navy. 12 mo. volume of 350 pages with 249 illustrations. Philadelphia and London. W. B. Saunders Company. 1917. Cloth \$2.00 net.

This book is an enlargement of lectures given to policemen and firemen of Philadelphia and nurses in the city hospitals, and we urgently recommend this book to the physicians who are conducting first aid classes for the Red Cross. It is amply illustrated and gives in detail the treatment of all emergencies. The chapters on transporting the wounded are very interesting and the illustrations are given of Fire carry, net jumping, splint stretchers, etc.

One chapter is devoted to poisons and other treatment.

Instead of relegating to the background our old tried and true remedies, we had better expend more time and study upon them.—J. G. Bulloch, Therap. Record.

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EDITORIAL

GREAT MILITARY PICTURE SYMPOSIUM FOR THE ANNUAL MEETING.

The Council has just concluded arrangements for a feature of the program for the Louisville meeting which promises to be so entertaining and instructive that no member, and especially no member who may be called to the colors before the war is over, can afford to miss it. To say nothing of the many other papers and discussions contained in the excellent program for each session, we are confident that this moving picture exhibit alone will many times compensate every member for the time and trouble required to attend the meeting.

This arrangement is with the Medical Council of National Defense for a great military symposium, filling the entire program of the afternoon and evening of one day, illustrating by pictures taken on the battle-fields and in the hospitals of France, Belgium and Russia, the latest developments in the handling, treatment and re-habilitation of the wounded, a subject soon to become of such vital interest to our own surgeons and soldiers and to every community in this State and country.

The National Council agrees to send the films, and army surgeons of experience to conduct this symposium, covering successively:

1. The medical and nurse work in removing the wounded from the battle fields, and ambulance and train work in carrying them to the emergency and base hospitals.

2. The technique of the leading methods of treatment including the Carrel-Dakin and other systems.

3. The rehabilitation of the wounded, and of such education and training of the hopelessly maimed as will fit them for useful lives under the changed physical conditions.

4. In the evening, films of battle fields, places of historic interest and other matters pertinent to the great war upon which our country is just entering.

While ours is primarily a scientific body,

and even this feature of the program will be arranged mainly for scientific instruction, for the fact that so many of our best members and friends have volunteered for service and expect soon to go abroad and become participants in such scenes as will be on the screen and under discussion, the meeting will be largely a patriotic one. For this reason it is suggested that every member in attendance who is entitled to use the uniform of the present, the Spanish-American or the Civil War on either side, wear it during the annual meeting and this should probably include all patriotic civil organizations authorized to wear uniforms.

J. N. McCORMACK.

OUR ASSOCIATION MEETS NOVEMBER 6 TO 9, IN LOUISVILLE.

The Council of the State Medical Association, by unanimous vote, has changed the place and date for the coming annual meeting to the Auditorium of the Seelbach Hotel, Louisville, to open at 10 A. M., Tuesday November 7 next, and it requests that the House of Delegates meet at 2 P. M., on the preceding day, November 6, in the Leather Room of the same hotel.

The change of the time for holding the meeting became practically imperative on account of an order of the War Department calling all members of Examining Boards for the Medical Reserve Corps of the Army to attend meetings of the Congress of Clinical Surgeons of the United States and the American College of Surgeons to be held in Chicago at a time which would have conflicted with the meeting of our Association as first planned. It is also expected that important information will likely be given to the Medical Officers ordered to Chicago which those from Kentucky may feel ought to be imparted to our entire membership, for which this later meeting will give opportunity, and probably prevent the expense and trouble of a called meeting.

NEW HONOR FOR THE BUREAU OF VITAL STATISTICS AND FOR KENTUCKY.

As has been known to the profession and registrars, Special Agents of the U. S. Census Department have spent the last three months in the offices of the State Board of Health investigating the birth returns of the Bureau of Vital Statistics in order to ascertain whether or not Kentucky was entitled to admission into the recently established federal registration area for births, as was done for deaths the year after the law on this subject was passed.

The investigation was a most comprehensive and far-reaching one. Inquiries were sent to all clergymen, postmasters, rural route carriers and women's clubs in the state as to every birth coming to their knowledge within selected periods and each name thus obtained was checked against the original birth certificates of physicians and midwives on the permanent files of our Bureau of Vital Statistics.

As the result of this careful and painstaking investigation, the State Board of Health has been formally notified that Kentucky is admitted into the registration area. This honor will be the more appreciated by our profession and people when it is known that, including Virginia, very properly admitted with Kentucky to represent the South, only seven states are now embraced in the Federal birth area.

In conferring this honor upon our State, the Director of the Census paid a high compliment to those charged with the administration of our law and especially to the efficiency of our medical organization and the faithfulness of the rank and file of our registrars. In striking contrast with this high praise the Director voiced one note of severe criticism. This was of the marring of the value of both birth and death returns from the entire state, caused by the failure of a few doctors to make their reports to the local registrars within the ten days fixed by the law. As an outcome of this criticism, it has been determined to promptly bring all such violations of the law to the attention of the courts.

It is urged upon those members who are always prompt in fulfilling their obligations to the profession and to the public, and who are mainly responsible for the high standard of excellency attained by the profession in its every endeavor, to give counsel to their erring brethren in this matter of birth registration and by repeated reminders to these "slacker" doctors and ignorant or unmindful midwives to make it possible within the next year to report to the director of the Census that Kentucky can be put in the 100 per cent. class instead of the present rating of 95 per cent.

There has never before been a time in the

history of this country when the facts recorded by vital statistics authorities were so important as now, in the face of the difficulties many young men encounter in showing their exact age under the selective draft law. With the co-operation of parents and especially of mothers, to see that the property and other rights of every child born to them are safeguarded by the prompt certification of its birth and parentage are made matters of permanent official record by the county, the state and the nation, as the law provides, and as every physician and registrar is paid to do, no such difficulties can occur hereafter.

Upon receipt of the official notification of admission to the privilege and honor of Federal registration, the State Board of Health at once put a large force of clerks at work making transcripts of all birth certificates for the present year, and hereafter all such certificates will become a part of the official records of the National Government.

The profession and people of Kentucky owe the inclusion of their state in the registration area for deaths to the pioneer work of Dr. Heizer, the first State Registrar, and they should be equally grateful to his successor, Dr. Blackerby, for this victory in bringing us into the area for birth registration.

PROGRESS IN THE CONSTRUCTION OF SEPTIC TANK PRIVIES.

It is gratifying to give the widest possible publicity to the following letter from the efficient alltime Health Officer of Jefferson County, for the jurisdiction outside of the City of Louisville. The subject of which it treats is of vital importance to every citizen of Kentucky, the drainage system of whose home does not connect with a public sewer, and every doctor worthy of the name in any small towns or country districts should make the drainage of his own house and the protection of his own family an object lesson for the people who trust him with their lives. The letter follows:

"Jefferson County Board of Health, Louisville, Kentucky, September 15, 1917.—To the State Board of Health Bowling Green, Kentucky.—Gentlemen: We have finished the construction of 46 Kentucky Sanitary Privies in the zone around Camp Zachary Taylor within the last two weeks and the County Board of Health on last Thursday let the contract for 200 more to be finished within the next six weeks.

"It will be of interest to you to know also that Dr. Fricks, of U. S. Public Health Service, working in cooperation with this Board, will at once start a unit of men in the construction of 200 more for the Red Cross people, which, with the 200 being put in by his

Service, will give 646 such privies in this one district of the county this year.

During the last two years the School Board of the county has constructed 96 of these privies for their school houses, and 352 had been previously built by private citizens under the supervision of this Board, so that before the cold weather sets in we will have close to 1100 complete, fly-proof, self-cleaning, septic tank privies in operation in this county.

Dr. Frieks, and his force are doing a lot of excellent work here in both the city and county, in the way of preventing and eradicating typhoid fever and other communicable diseases, and in creating a public sentiment for better sanitary conditions, and in it all we are having the cooperation of Judge Greene and the Fiscal Court to an extent which is most gratifying.

Respectfully yours,
J. I. WHITTENBERG, M. D.,
County Health Officer."

In this connection we are glad to say that Dr. J. S. Lock, the only other all-time health officer of the State, reports that in Mason County, with funds provided by the Fiscal Court and citizens of that county and the State Board of Health, in addition to a health survey of every home in Maysville and the county districts by officials of the U. S. Public Health Service, about 200 similar privies have been constructed there and contracts have been signed up for nearly 600 more, and the work is going on actively.

This form of privy has been officially adopted in California, Louisiana and by many counties and will likely be accepted by the U. S. Army at an early day, and our State Board of Health is now in position to propose that it will furnish, dollar for dollar, funds for carrying on this work, as is now being done in Jefferson and Mason Counties, for any county in Kentucky whose fiscal court or citizens will raise a fund of not less than \$2,250 and not more than \$4,500 for such surveys and actual construction work during 1918.

What could we not do to save the health and lives of the people of Kentucky year after year, if we only had a full-time health officer in every county to conduct such work as Whittenberg and Locke are doing in these two counties?

MEDICAL INSTITUTIONS.

The Propaganda Department of the American Medical Association is just sending out a third edition of its very interesting pamphlet on Medical Institutions. The physicians whose patients are being attracted by the false and specious claims of these people will do well to get copies of this pamphlet for distribution.

SCIENTIFIC EDITORIALS

GONORRHEAL ERUPTIONS.

Several years have now passed since the epochal work of Billings called the attention of the medical world to the tremendous importance of focal infections and hematogenously borne bacteria of certain types in the etiology of an extremely long and varied list of diseased conditions. Unlike many fads in medicine, instead of having a brief, even if brilliant, vogue, followed by oblivion, the passage of time, with its opportunities for investigations, has only served to call increasing attention to the importance of this subject. Most of the work along this line has been in investigations of infections due to the streptococci-pneumococci groups, and there has been so much to discover here that it is not strange that infections due to other bacteria has been somewhat neglected for the present. However, with the increasing number of research laboratories and the successful culmination of investigations now under way, there will soon be many workers free to undertake the study of the etiology of conditions already known to be the probable result of infection by other forms than the streptococci-pneumococci. An important field awaits the investigator in the gonorrheal eruptions.

The eruption in gonorrheal infections has as distinct characteristics as in other infections, such as syphilis, small-pox, typhoid, measles, scarlatina and varicella. The dermatoses due to gonorrhea may be divided into two groups; to the first group belongs eruptions of the exudative type; to the second eruptions of a dystrophic character, such as keratoses and parakeratoses, exfoliated dermatoses, and the like. In some of these cases the exact etiology has not been worked out, yet we know that the gonorrheal sepsis is the chief contributing cause, even if not the sole cause. In many of these cases there is still the old controversy as to whether the eruption is due to the actual presence of gonococci locally or whether it is a manifestation of the toxic action of the cocci, perhaps at a considerable distance from the lesion in question. Judging from the fact that in the case of other bacteria more and more of the lesions are being discovered to be due to the actual presence of microorganisms in the lesion, so here we may prophesy that most of these eruptions are due to the actual presence of the gonococci in the skin. We must not be too impatient in this regard, but must remember how many of the most important dermatoses are still of unknown etiology, as, for example, psoriasis, lichen ruber planus or acuminatus, pityriasis rubra Hebra, pityriasis rosea, and the various herpes, though recent investigations would put many of the herpes

tic eruptions under the list of the streptococcal infections.

The exudative erythema due to gonorrhea are often difficult to differentiate from other members of the erythema group, and a positive diagnosis cannot be made until other factors have been investigated and weighed, such as intestinal intoxication, faulty internal gland secretion, insufficient elimination, etc. We must particularly be on our guard not to confuse with the eruptions of gonococcal nature those polymorphous erythemata and urticarias which occur both endemically and epidemically in the spring and fall of the year and which are either infections or manifestations of sensitization.

Gonorrheal polymorphous erythema is usually more easily diagnosed, and is accompanied by fever, chills and considerable malaise, the latter being prone to hang on for several weeks.

Reviewing the cases that we have ourselves seen in the course of our practice, we are not surprised at the large number of such eruptions. The toxicity which this germ can show, its ability to infect various tissues quite seriously, its power of transmission from one focus to another through the blood-stream, all these things should prepare us to understand that manifold eruptions may be due to it. Further study of these eruptions will clear up the etiology to a considerable extent.

M. L. RAVITCH and S. A. STEINBERG.

Autogenous Defibrinated Blood in the Treatment of Bronchial Asthma.—Morris H. Kahn and H. W. Emsheimer (Medical Review of Reviews, May, 1917) believe that bronchial asthma is due to sensitization by a foreign protein, and that autogenous defibrinated blood, obtained preferably during the attacks of asthma, serves as antigen for treatment by active immunization. They report six cases thus treated which showed improvement through a diminution in the severity and frequency of the attacks, a gain in weight, an increased ability to work, and improved subjective symptoms.

There is a type of uterine hemorrhage due to thyroid deficiency and controlled by exhibition of the thyroid extract.—S. Salzman, *Am. Jour. Obst.*

Renal Disease—Theoretically a vegetable and milk diet should give the best results. Practically, theory is confirmed in only a few cases.—C. Bartlett, N. Y. M. J.

The effect of heliotherapy on tubercular lesions is amazing to read. On the Gulf Coast from Galveston to the Mexican border there are but 43 days a year without sunshine.

ORIGINAL ARTICLES

COMBINATIONS, MIXTURES AND SEQUENCES OF ANESTHETICS.*

By W. HAMILTON LONG, Louisville.

It would seem as logical to combine certain of the agents which produce anesthesia as to combine drugs given for any purpose which have a similar action, but since the almost complete abandonment of the once well recognized A. C. E. mixture, a lack of appreciation of the merits of certain mixtures or combinations, or both, seems to have arisen. Or rather we would better say of official recognition, or standardization of mixtures and combinations. Casual reference is frequent, but definite classification is lacking.

Certain anesthetizing agents have characteristics peculiar to themselves, and a combination or a mixture of two or more of them, in fixed proportions for the entire administration, or in proportions varying during the administration, may be attempted with a definite view of constructing a mixture or combination that will better meet the indications of a given individual case than will any agent used alone. The ideal anesthetic agent, lending itself to routine application, does not exist, and the attempt to apply such is an attempt to fit the patient to the agent and method, rather than a scientific choice of method and agent for the patient.

If, in the choice of agent and method for any given case we have many factors to consider—character of operation, operator, condition of patient, age, presence or absence of shock, to mention but a few—then in the choice of a sequence, combination or mixture, we must, if we are intelligently to exhibit one, determine upon the same with the idea, and in the belief that in the combination certain actions, effects, and characteristics of each constituent are definitely sought; that as has been said, our mixture must appeal to our judgment as being better suited than any of its components used singly.

For the easier understanding of the subject we will make a rough classification with definitions. By a combination we shall mean that two or more agents are given by different methods, but with a view to a combined narcotizing or anesthetizing effect. For example, opium by any of its alkaloids,—paraldehyde, or any narcotic given preceding or during the administration of our inhalation anesthetic, and given as an adjunct thereto, and with the idea of augmenting the action of the latter. By a mixture we shall mean two or more agents given together, by the same method with the idea that our mixture

*Read before the Jefferson County Medical Society.

has certain advantages not possessed by either of its constituents alone, and by a sequence we shall mean the induction of anesthesia with one agent, and its maintenance by another agent or a mixture.

The combination most frequently used of course, is opium plus an inhalation anesthetic. The use of this combination in many clinics has become nearly routine, still condemnation of the combination is not lacking, and some whose opinions must command respect, denounce it in no unmistakable terms. My own practice of late has been modified from a routine administration of a set dose, as follows: I see my patient, when possible, beforehand and determine whether or not any morphine—the most generally used form of opium—will be of definite use. I enquire as to previous administration of opium for any cause and occasionally discover an individual with a pronounced idiosyncrasy. Also it must be borne in mind that we may occasionally, by indiscriminate or routine prescribing of morphine awaken a dormant appetite in an ex-habitue. The former addict will not usually admit that fact, but will ask on some pretext, that no morphine be used. I am never so insistent on it that the patient's wish is not observed. Further, I gauge my dose by the type and size of the patient. Certainly there is sense and reason in using, even though roughly, the body weight as well as the type of individual as an index to the size of the dose. Instead of the customary "one-fourth and one-hundredth and fiftieth," the dose may be 1-8, 1-6, 1-4 and occasionally 1-2, to such individuals as the big, husky muscular alcoholics, athletes, laborers and those who lead rugged outdoor lives. The dose of atropin—which in ether anesthesia is insisted upon whether morphine be given or not—varies from 1-200th to 1-75th. Incidentally, I always give the preliminary opiate in a single dose, which should precede the induction of anesthesia by at least a half hour, if the desired effect is to be observed. The best practice is not to give a routine opiate, but to give an opiate only if a definite indication seems to exist.

The disadvantages of the opium combination must not be lost sight of. The effect of a dose sufficiently large to produce any analgesic or narcotizing effect may, and frequently does interfere noticeably with the respiration, producing a shallowness in lightly anesthetized subjects; and an occasional sub-conscious voluntary suspension—not to be confused with respiratory paralysis due to overdose of the pulmonary anesthetic—with which anesthetists are familiar, and which is more troublesome than dangerous. There is really no question that the valuable pupillary sign is interfered with by opium and the pupil that remains a pin-point under deep

ether narcosis is one which will not dilate until dissolution is near at hand—probably too late for warning.

There is excellent scientific reason for the use of the morphine preliminary in the findings of Crile relative to the H-ion concentration as an index to the blood acidity (1) His experiments show that when morphine preceded anesthesia by either N_2O or ether—both of which agents cause an increased acidity or rather a lessened alkalinity—this increase was appreciably less than when no morphine was given.

With other narcotics save Hyoscine, I have had no personal experience, and the latter I have thrown out years ago. Its action was so ununiform; so erratic and variable that more frequently an opposite effect was observed than the one desired. Gwathmey likes paraldehyde and bromide in a class of subjects saying (2) "For very weak and feeble patients, for those in the extremes of life * * * * where the patient is in coma, or has acute or sub-acute nephritis or any respiratory affection, the morphine should be omitted and bromides or paraldehyde per rectum substituted." In my own work I have left off the narcotic medication entirely if morphine has been ruled out.

To summarize the place of opium or any narcotic in an anesthesia combination I would say: Use it only where a definite indication seems present. Broadly speaking, where its action is to be in conjunction with that of the agent of inhalation. It is impossible intelligently to make a classification and say, "Patients in this class shall have opium; patients in that class shall have none." The anesthetist's judgment coupled with that of the surgeon should be the guide. There is good authority for its routine use, and as good authority for its complete abandonment.

In the matter of mixtures, there is probably an even wider divergence of opinion. There are those that say "Why subject the patient to the dangers of two agents when either alone has dangers enough?" It is very true that each of the drugs used for inhalation anesthesia has its own peculiar dangers, but it does not necessarily follow that a mixture combines these dangers. On the contrary one may counteract the dangers of another or enhance the action without adding to the dangers of another. In actual practice such is certainly the case, especially as regards the two mixtures described later.

There have been recommended from time to time an almost countless number of mixtures, mostly chloroform-ether, or alcohol-chloroform-ether mixtures. Also definite mixtures have appeared on the market under patented names, such as somnoform and anesthol.

An elaborate recounting of the definitely recognized mixtures can be found in Gwath-

meys' Anesthesia². Briefly it will suffice to touch on the chemistry and history of what I might term the "Anesthol" or "Molecular Solution" group of chloroform-ether and chloroform-ether-ethyl chlor. mixtures, which were brought to the fore eighteen to twenty years ago by Willy Meyer, Weidig, and Schleieh. Anesthol³ as it was finally trademarked was the last of several experimental mixtures used by Willy Meyer, and the one adopted by him in 1898. It consists of 73% by volume of "M. S." and 17% by volume of ethyl chloride. "M. S." is an abbreviation of molecular solution (of chl. and ether) and consists of 43.25 parts of Chl. and 56.75 parts of ether by volume. It was maintained by Meyer and Schleieh that in these proportions a "Molecular Solution" was formed—a chemical combination—a new anesthetic containing neither free chloroform nor free ether, and having a boiling point and evaporation rate of its own,—was formed. By this, of course, is meant that while the A. C. E. mixture in evaporating gave off successively the vapors of its most volatile components separately: i.e. a quantity standing in an open dish gave off the following sequence of vapors, ether, chloroform, alcohol, "M. S." evaporated without fractionation, the last vapor being identical with the first. This reference to anesthol is merely to show that one mixture achieved recognition as such and a name of its own, in the face of the abandonment of the A. C. E. mixture. In August, 1908 Willy Meyer reported³ that he had used anesthol in his hospital and private practice for 10 years preceeding that time, "in many thousands of cases, and consider it, when preceeded one hour by a hypodermic of morphine, the least dangerous of all anesthetics thus far known, especially in the hands of the inexperienced, and this not only as regards safety of the patient while on the operating table, but principally as to its after effects." This was a strong endorsement, and doubtless coming from such a source would have opened a wide field for anesthol, had not nitrous-oxide-oxygen, and nitrous-oxide-oxygen-ether (the mixture, not the sequence) been at just about that time appearing and making their well-founded claims for safety.

When contemplating the chloroform-ether mixture we must keep in mind the outstanding characteristics of the two agents composing it. Chloroform is the most potent in its narcotizing effect of any known pulmonary anesthetic, but it is a powerful circulatory depressant and has secondary dangers of serious character, while ether is far less effective, requiring a different technique for its administration; far safer as regards both primary and secondary dangers, and is an extremely efficient diffusible stimulant, as are all the ethyl group. It is

not only logical to suppose then, that a mixture of these two with the object of counteracting to a considerable extent the disadvantages of each, with the advantages of the other is feasible, but it is a demonstrable fact in practice. Whether we have a true "M. S." or not is of little consequence, and assuming that a molecular solution does not take place, the method of administration insures the inhalation of the mixed vapors in approximately the proportions intended save that, whether mixed on an open inhaler or in an air-tight inhaler of the Junken type, the ether vapor will predominate over the ether in liquid at the expense of a corresponding reduction in the chloroform vapor in ratio to the liquid chloroform. Thus a 1-3 to 2-3 mixture in a container is probably more nearly a 1-4 to 3-4 vapor when absorbed. This may be disregarded practically, and is an inaccuracy in the safe direction—viz., toward ether predominance.

What are the special indications for chloroform ether mixture? As has been stated, where some action of each is desired. In practice, I find the chloroform-ether mixture, and we mean approximately a 1 to 2 mixture, to give an anesthesia possibly resembling more closely a chloroform than an ether anesthesia, but without the depressing effect of the chloroform. Bellany Gardner⁴ says of chloroform-ether mixture "the color and breathing are deeper than under chloroform, but not as deep as under ether * * *." The circulation is decidedly more vigorous than under chloroform * * * * The mixture causes very little secretion of mucus in the air passages * * * it form a golden mean in all cases of doubt as to the most suitable for any particular case, and is the most valuable anesthetic for use by the general practitioner." Gwathmey⁵ says: "Notwithstanding the position taken by Dawbarn and others, it is a fact that in practice mixtures of chloroform and ether have proven to be safer than ether and chloroform alone."

This statement as to safety does not seem reasonable. Certainly it is safer than chloroform alone, but not so safe as ether alone. Its danger point must be somewhere between the two, as surely as that a hot and a cold water poured together will have a temperature between the two extremes of the original liquids. And this simile may be carried further so we may say that the greater safety will be as the safest agent, viz: Ether predominates in the mixture. My own view is to look upon the mixture as a chloroform anesthesia, reinforced by ether stimulation, or an ether anesthesia augmented by the greater narcotic effect of chloroform, and the former is usually predetermined, while the latter meets an exigency arising after anesthesia is started.

As to the technic for the administration of the chloroform-ether mixture an open method i.e., as for chloroform alone, is generally urged.

Hewitt⁵ says: "Speaking quite generally, and assuming that an open mask is to be employed, the mixture is to be preferred to chloroform." He insists upon an open administration at all times, while Gardner⁴ recommends also a semi-closed method, using the Rendle mask, which is of the Allis type, and in this country practically obsolete. It is obvious that an open technic should be employed, and the vapor method referred to below, may be considered an open method by which is simply meant copious air dilution and no intentional re-breathing.

It is by the vapor method that I most frequently use the mixture, in anesthetizing for operations in the throat, about the mouth and face, as tonsillectomy, cleft palate, hare-lip, etc. Those cases in short in which the anesthetist has not unhampered access to the respiratory inlets. Ether alone will be found ineffective in many of these cases, unless we are satisfied with an intermittent procedure, which is more dangerous and far less satisfactory, than a continuous maintenance, and has an extremely unscientific and makeshift appearance. The surgeon appreciates a smooth continuous anesthesia which does not hamper his aseptic technique nor cause delays. The chloroform-ether mixture by pharyngeal insufflation, using the nasal tubes, the naso-pharyngeal tubes, oral-pharyngeal tubes, or a vapor conducting gag is chosen in such cases where a fairly profound anesthesia must be maintained often for a long period. It is chosen rather than chloroform because of its greater safety and rather than ether because of its greater efficiency. The constant agitation in the Hitz bottle (an improved Junker) by the brisk current of air which passes constantly through it insures the equal or nearly equal, evaporation of the two agents. In my opinion, only that type of air tight jar in which evaporation is caused by the air passing through the mixture is to be used. The type in which the vapor is taken up by the air current passing *over* the surface of the liquid, does not give us as constant, a volume of vapor, and is open to the objection of delivering the vapors of chloroform and ether separately, assuming that passive fractional evaporation takes place.

I have used the chloroform-ether mixture as above for about two years with increasing satisfaction. It is really chloroform anesthesia without chloroform depression. Other uses of the mixture, on the open face mask have been often resorted to by me, not as a predetermined technic, but as has been said, to meet a condition arising after induction. Thus an unfavorable type for abdominal re-

laxation may through the course of an ether anesthesia have added a small amount of chloroform for relaxation, making it chloroform-ether anesthesia, just as a little ether may be added to a N₂ O. O. anesthesia, changing the technic and making it a N₂ O. O. E. anesthesia. On the other hand, in the course of a chloroform anesthesia the smallest quantity of ether, 30 to 40 drops, on the mask every two or three minutes will frequently overcome a circulatory depression, and a blood pressure fall which was observable.

This latter is not a true mixture anesthesia as the ether is added not for its additional anesthetizing value, but for its action as a diffusible stimulant, than which there is no better.

Something must be said of the most valuable of all the mixed anesthetics, N₂ O. O. Ether. We are not referring to the N₂ O. O. E. sequence in which after induction is complete, the N₂ O. is discarded for a straight ether maintenance, but to that form of anesthesia of which N₂ O-O as the base or vehicle, is given continuously, and to which either vapor is added from time to time as may be found necessary to achieve the desired relaxation. I insist upon a distinction being made between this technic and an unmodified N₂ O-O administration. N₂ O-O is the safest when properly given of all inhalation anesthetics, but the fact that the depth of its action is decidedly limited makes the addition of a more potent agent frequently necessary, and ether as being susceptible to the same closed rebreathing method which is necessary for gas, is chosen. Were N₂ O-O capable alone of maintaining a profound anesthesia, the ether attachment with which all ether apparatus are equipped, might be discarded. It is beyond question that the efficiency of N₂ O-O has been exaggerated in the minds of many from the fact that the occasional "whiff" of ether was not mentioned in the reports, and anesthetics were recorded as gas-oxygen anesthetics which in fact were gas-oxygen-ether anesthetics. *Any amount of ether added to a gas-oxygen anesthesia*—for we must remember that to a patient already partially relaxed but little ether in addition is necessary—*makes that a gas-oxygen-ether mixture anesthesia.* The ether was added because a definite indication was noted. And it is given in sufficient quantity to meet that indication whether the amount found necessary be 1-2 dram or 4 ounces. The amount of ether necessary in addition to the gas is small compared to the amount which would be used alone and the relaxing effect is much the same. Moreover a fairly deep narcosis from ether may be induced early and the subject "carried" with gas-oxygen to the completion. The recovery from such an anesthetic will very closely simulate that from a pure N₂ O-O anesthesia. A

morphine preliminary may be used in combination with a gas-ether anesthesia, but I believe better results will be obtained by omitting opium.

Let us bear in mind that mixtures in anesthesia are frequently of value and use them when indicated. We aim at two things principally: safety and efficiency. The safest anesthesia may not be efficient from the standpoint of the operator. And the most efficient may be too dangerous in its action. Bearing in mind our particular case and all of its phrases we may often decide upon a mixture which will the better meet the requirements than will any anesthetic agent alone.

Sequences in anesthesia may be very briefly discussed. To produce complete anesthesia in the shortest time, and with the least discomfort to the patient is the object. By the use of a very quick acting agent for induction, nitrous-oxide is the best example—the excitement stage may usually be bridged. Taking the nitrous-oxide-ether as an illustration, we find that nitrous-oxide-oxygen produces in from one-half to two minutes, a complete anesthesia. Indeed, it seems that a depth of narcosis may be achieved early with this agent, greater than can be maintained for a prolonged time. Taking advantage of this stage, a little ether vapor is “let in.” If there is no laryngeal spasm and these reflexes are abolished in this early stage of gas narcosis we may gradually increase the amount of ether, merging from a nitrous-oxide anesthesia to an ether anesthesia. When the latter is achieved the gas is put aside entirely and ether anesthesia maintained by any method the anesthetist prefers. Surgical anesthesia is usually achieved in from four to six minutes, and the induction is stripped of all its unpleasant features.

Other sequences frequently used are ethyl-chloride-ether, chloroform-ether, and in late years oil of orange-ether. The latter, developed by Gwathmey, is not a true sequence of anesthetics, in that the essence of orange (oil of bitter orange peel, 25%, alcohol 75%) has not of itself any anesthetizing properties, but it has a pleasant pungent odor and the addition of a small quantity of ether vapor is not detected after a few seconds of breathing of the orange oil. In fact the patient usually lapses quietly into narcosis conscious of no odor other than that of the pleasant oil of orange, so completely does it mask the ether. This sequence has been used very successfully with children and in others to whom the odor of ether, suggestive at all times of the operating room and its terrors, is disagreeable. It is a psychic sedative in that way, and used in selected cases has a valuable field.

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ORAL SEPSIS FROM THE VIEW POINT OF THE PEDIATRIST.

By EARL MENDUM TARR, Boston Mass.

The theory that many acute and chronic secondary infections may be traced to local foci is so generally accepted by most observers that the writer will dare to consider the argument closed. The train of obscure symptoms that eventually led to careful examination of the teeth in most instances disappeared or were greatly relieved when the filth-pyorrhea if you choose—was discovered and treated. And while the etiology and treatment of pyorrhea has attracted a great deal of attention, both from the dental and medical professions, no great amount of progress has been made toward its cure. In the light of our present knowledge of the disease the best way to cure it is to prevent it.

For the past two or three years writers have been agreeing that a primary septic focus in organs other than the heart, viz., the teeth and tonsils, is usually present and not infrequently operates in the etiology of pathologic cardiac conditions. The recent work of Anders (1) is a striking evidence of what may be expected when more careful study is given the tooth root theory of disease.

My personal interest was aroused a few years ago when an infant of twenty-one months was brought to me with a severe ulcerative stomatitis. After ten days of careful, and what I considered specific, treatment, the condition was unrelieved and I became anxious. The temperature ranger from 101 to 103 and the child refused all food. The ears were examined and found to be perfectly normal. A most careful complete physical examination revealed nothing to me and I referred the case to a colleague. A week later the mother returned with the child—not for advice or treatment—to tell me in her nice way that Dr. — had simply pulled two badly decayed teeth and a prompt and complete recovery had taken place. I remember distinctly that I was not called upon again but I learned my lesson early and have no regrets. I had been taught, or rather lack of teaching had led me to deduce for myself, that it was quite natural for children to have decayed teeth and that Nature, as a rule, was amply prepared to care for the condition. This was only another instance where the old

gag "Let Nature take her course" was being overworked.

During the past two years I have examined every child's mouth that offered me the opportunity and I am thoroughly convinced that a large per cent of diseases seen by the pediatricist and which he must treat are the result of faulty oral hygiene. Several hundred case histories have been studied and the instructive cases have been classified and charts prepared. These cases are from the house records of hospitals in five of the largest cities in America and the largest city in Canada. They are incomplete but worthy of a glance.

CHART I.—OTITIS MEDIA.

Sex	Age	Carious Teeth	Tonsils	Ear Drum
Male	14 Mos.	2	Large & Cryptic	Both Bulging
Male	18 Mos.	5	Small & Healthy	Red & Bulging.
Male	11 Mos.	2	Small & Healthy	Disch. Freely.
Female	28 Mos.	1	Large & Cryptic	R. cl'r; L. bulg.
Male	31 Mos.	5	Removed	R. cl'r; L. bulg.
Female	3 Yrs.	7	Removed	Both red & bulg.
Female	3½ Yrs.	5	Large & Cryptic	R. clear; L. bulg.
Female	3½ Yrs.	7	Removed	R. clear; L. bulg.
Female	3½ Yrs.	6	Removed	R. clear; L. bulg.
Male	4 Yrs.	7	Removed	R. clear; L. bulg.
Female	3½ Yrs.	6	Removed	R. clear; L. bulg.
Male	4 Yrs.	7	Removed	R. clear & bulg.
Male	5 Yrs.	7	Removed	Both red & bulg.
Male	5 Yrs.	7	Removed	R. cl'r, L. red & bulg.
Female	5½ Yrs.	5	Small & Healthy	Both red & bulg.
Female	6¼ Yrs.	6	Small & Healthy	Both red & bulg.

The first four cases were children under two and one-half years. At this age one would scarcely expect the teeth to have become bad enough to cause trouble. All of these children were in possession of their tonsils, two being definitely diseased and two being apparently healthy. All four of them had been allowed pacifiers. They were all bottle fed babies.

Ten of the sixteen cases were children between two and a half and six and a quarter year old. Their tonsils had been removed from eight months to three years previous to the onset of their present illness. Paracentesis was done on one or both drums as the condition demanded and prompt recovery followed in most cases. It was possible to follow six of the cases for a little over a year. In two cases the teeth were given proper attention and the healthy ear remained so until the cases were lost sight of. In the other four cases the parents neglected to have the teeth attended. Two of them developed a subsequent otitis and were treated from two to five weeks before a recovery was insured. One developed a severe otitis which was followed in 5 days by meningitis. The child died a week later. The spinal fluid showed an increased cell count, globulins all positive, VonPirquet strongly positive in eighteen and forty hours. The organism was not found but the clinical picture was consistent with the tuberculous type. The fourth case when last seen was in the height of a severe chorea. The healthy ear had given no trouble.

CHART II.—MENINGITIS.

Sex	Age	Carious Teeth	Tonsils	Ear drums	Type
Male	15 Mos.	4	Small & Healthy	Normal	Tbc.
Male	17 Mos.	6	Small & Healthy	Normal	Tbc.
Male	22 Mos.	5	Large & Cryptic	Normal	Tbc.
Female	16 Mos.	5	Small & Healthy	Normal	C'broS.
Female	20 Mos.	6	Small & Healthy	Normal	Tbc.
Male	23 Mos.	6	Small & Ragged	Both rd	P'coccus
Male	2 Yrs.	7	Small & Healthy	Normal	Tbc.
Male	2½ Yrs.	7	Small & Healthy	Normal	P'coccus
Male	3 Yrs.	7	Removed	Normal	Tbc.
Male	3½ Yrs.	9	Removed	Normal	C'bro S
Male	4 Yrs.	All car's	Removed	Normal	Syph.
Male	4½ Yrs.	All car's	Removed	Bth disc	Syph.
Male	4½ Yrs.	All car's	Removed	Bth disc	Syph.

*Service of Dr. John Lovett Morse.

In two of the twelve cases the tonsils were definitely diseased, in seven instances they were apparently normal and healthy and in three instances they had been removed.

The number of carious teeth ranged from 4 to 9 and in the two last cases the teeth were all gone, only a few roots remaining.

The number of carious teeth seen in the first seven cases, including babies up to the second year, is rather startling. One month showed four and another seven badly decayed teeth. This should be remembered when we see an infant and are about to neglect a careful examination of its mouth because it "seems" too young to have many bad teeth.

CHART III.—EAR-ACHE.

Sex	Age	Carious Teeth	Tonsils	Ear Drums
Male	6 Yrs.	4	Removed	Normal
Male	4 Yrs.	5	Small & Healthy	Normal
Female	4 Yrs.	4	Removed	Normal
Male	9 Yrs.	6	Removed	Normal
Female	8 Yrs.	5	Removed	Normal
Female	7 Yrs.	7	Large but clean	Normal
Male	6 Yrs.	5	Removed	Normal
Female	9 Yrs.	7	Small & Healthy	Normal
Male	11 Yrs.	6	Removed	Normal
Female	8 Yrs.	6	Removed	Normal
Female	10 Yrs.	8	Removed	Normal
Male	10 Yrs.	7	Large & Cryptic	Normal
Female	9 Yrs.	5	Removed	Normal

In nine of these thirteen cases the tonsils had been removed from one to six years previous to the onset of the first attack of ear-ache. Two of the others had large but apparently healthy tonsils and in only one case were the tonsils definitely diseased and at all likely to be the cause of the trouble. The drums were most carefully examined in every case and none showed anything remarkable. Just why none of them should show not even a slight redness I am not prepared to say. I expected often with the severe symptoms that presented to find definite redness and bulging of one or the other drum but this was the exception.

So many cases of toothache in children between the ages of four and fourteen were brought to my notice that I have long since abandoned the task of keeping a record of them. It is the rarest thing imaginable to look into a mouth with several carious teeth and not get a history of toothache at some time or other. Most of these decayed teeth are exceedingly sensitive and the slightest

manipulation causes pain. If one will take the pains to use a soft-wood throat stick and massage the gums about a carious tooth not infrequently will pus be forced into the field. At the junction of the tooth with the gum the color changes and with some experience one can often tell by the look and feel whether abscess formation has taken place or not. In something over a dozen cases where the appearance of tooth and gum suggested to me the presence of an abscess the X-ray confirmed the diagnosis.

With healthy ear drums and with a healthy throat if the ear persists in giving trouble it is reasonable to presume that the diseased teeth are the foci of infection and no time should be lost in attending to them. Here again, the matter of extraction or repair should be left to the dental surgeon.

CHART IV.—ACUTE ENDOCARDITIS.

Sex	Age	Carious Teeth	Tonsils	Prev. Diseases
Female	5 Yrs.	7	Removed	Measles
Female	5½ Yrs.	6	Removed	Pertussis-Variola
Male	4½ Yrs.	6	Small & Healthy	Measles-diphtheria
Female	6 Yrs.	8	Removed	No prev. illness.
Male	6 Yrs.	8	Removed	Tonsilitis-Measles
Male	7 Yrs.	6	Removed	Scarlet Fr-Mumps
Female	6 Yrs.	7	Removed	Ton'itis-Pertussis
Male	8 Yrs.	9	Removed	Varicella Asthma
Ma'e	8½ Yrs.	6	Small & Healthy	No prev. illness
Female	9 Yrs.	7	Large & Cryptic	Tonsillitis.

There was a history of rheumatism in only one of these cases, the last. Both parents had suffered with the inflammatory type for years but showed no cardiac lesion. In seven of the ten cases the tonsils had been removed from one to five years previous to the onset of the cardiac symptoms. Several of the cases were under observation at the same time and it was noticed that those whose teeth were given attention recovered much more rapidly than those who received no dental care. From personal observation I am convinced that it is useless to keep a child flat in bed for an endocarditis and ignore several carious teeth and expect prompt results from your treatment.

CHART V.—CHRONIC VALVULAR DISEASE.

Sex	Age	Carious Teeth	Tonsils	Prev. Dis.
Ma'e	7 Yrs.	8	Removed	Measles
Male	8 Yrs.	10	Removed	Scarlet-Metsles
Fema'e	7½ Yrs.	9	Removed	Ton'itis-Variola
Male	9 Yrs.	7	Large & Cryptic	Ton'itis-Measles
Female	9 Yrs.	10	Removed	Diph-Variola
Fema'e	8 Yrs.	7	Removed	M'sles-Per-Mps
Female	8 Yrs.	8	Small & Healthy	Vari.-Scar.-Otis
Male	9 Yrs.	8	Removed	No prev. ill'n's

CHART VI.—PYELITIS.

87 cases in children between 4 and 12 years.
Boys 31. Girls 56.
Carious teeth: 3 to 11.
Tonsils: Removed 42
Present and diseased 29
Present and healthy 6

Casts were found in several cases and albumin in several where the pus was present in large amount. Only two of the 87 cases did not have carious teeth. All were treated along the same lines and those who responded most rapidly were those who were sent to the

dentist for treatment. All were eventually relieved of their symptoms but it was learned that recurrence is frequent where carious teeth are not discovered and given proper attention.

CHART VII.—CHOREA.

212 cases between the age of 3½ and 19 years.

Boys 94

Girls 118

Tonsils: Removed 61

Diseased 138

Healthy 13

Carious teeth: 3 to 14. I have yet to see a case of chorea that has not one or more carious teeth.

History of rheumatism: 149 cases.

Cardiac lesions: 172 cases. Four cases when first seen were free from murmurs but developed them during the course of treatment.

Average period of rest in bed: 7 weeks.

Recurrence: 16.

Unhealthy tonsils and carious teeth will be encountered in chorea about as often as one will take the trouble to look for them. In the above cases only 149 gave a history of rheumatism. All of these and most of the remaining had from 5 to 10 carious teeth. The tonsils that were spoken of as healthy were those that were so small that they were seen with difficulty when the throat was examined by one trained in throat examinations.

Some writers have noticed in recent years that chorea is not so prevalent as it used to be and they attribute this to the fact that more diseased tonsils (and healthy as well) are being removed. From a review of the literature on the subject one finds that chorea is seen much more frequently to-day than it was 10 or 15 years ago, even though we are paying more attention to diseased tonsils. But, unfortunately, very few of us consider carious teeth as a predisposing cause of chorea or any other disease that young children are heir to.

Observation has convinced me that the vast majority of general practitioners, and pediatricists as well, pay too little attention to the condition of the teeth. We condemn the tonsils and have them removed but a mouthful of carious teeth receives little consideration. Darland² has suggested that the physician will do well to consult a dental surgeon before advising the wholesale extraction of teeth. This applies more particularly to adults than children but it must be remembered also that a good masticating surface is essential to the digestive function in children as well as in adults.

It is quite probable that the liquid and soft diet that the average child gets during his first four or five years predisposes to carious teeth. Modern cooking prepares food in such a way that proper mastication appears unnecessary. As a consequence of this the teeth become ornaments, are poorly nourished, the circulation both in the teeth and gums is poor and neither are able to resist infection.

Bearing in mind that the tooth joint is the poorest joint in the body—a peg joint—and that its systems of circulation are both terminal, it is obvious that anything that inter-

feres with the circulation would furnish a point of least resistance for the invasion of bacteria. As mentioned by Cobb³ when infection once gains entrance at the junction of the gums with the teeth it is likely to progress until it invades the alveolar process.

This can be avoided if oral hygiene be practiced. Personally I have little regard for the various tooth pastes and mouth washes so universally used. If doctors would advise mothers to give their children good stiff tooth brushes and teach them to use them on their gums rather than on their teeth we would undoubtedly see fewer cavities. This would at least temporarily improve the circulation and help the leucocytes to take care of the invading hosts.

The charge of carelessness rather than ignorance may justly be conferred upon all of us who neglect the teeth and insist on better oral hygiene. The child's teeth should receive just as much consideration as his food and every cavity should be treated *early*. The patient should be referred to a qualified dental surgeon who has enough tact and patience to do what is necessary. This is nearly always possible because even the small towns of to-day boast of at least one dentist who does not believe that it is "natural" and proper for the temporary teeth to "rot out."

Search history and you will find that in all human endeavor improvement begins at the top and slowly percolates down through the masses. One man runs ahead of the crowd and plants a standard, then drives the rest up to it. The standard of health during childhood has already been set and a *clean* mouth is one of the first *absolute* necessities.

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HOW SCHOOL TEACHERS CAN BENEFIT DOCTORS.*

By EVA MCKENDRIE, Bardwell.

There are five principle health agents that exist in our public school system, viz: School hygiene, personal hygiene, physical education, medical inspection, and municipal medical charity. Of these school hygiene is by far the oldest. Until the last few years it has been an academic subject rather than a practical force, but now our Western Kentucky State Normal School and other schools have trained our teachers in such a way that they go into the rural districts and link personal and school hygiene and other health agencies into real life. Teachers are really becoming medical inspectors in their school work, and can help the doctors in their work for they have indeed performed a stupendous task.

When the doctors entered into this age of prevention it was for a long time that they stood alone, but now the teachers have come to aid in this great work. The great question might arise how can the teachers of Kentucky cooperate with the doctors and become a real help.

1. The teacher can exercise the art of preventive medicine; she can keep her room well ventilated, abolish the slate-pencil box, and the common drinking cup, see that her children have the proper size desk, give the children nerve-resting periods and change of work; and really treat them so greatly that nerve-storms are unknown. She can also open the windows and doors between every class hour, so that each new class will be greeted with pure air, for we well know that this foul atmosphere is almost a curse in our school system. It has been said that half the teachers who die of consumption, are the victims of their own ignorance or neglect. For every teacher can live health as well as teach it.

You might ask of another way in which we can be a benefit to our doctors. As we know, all schools cannot maintain an inspector or a school nurse, but our teachers can perform this work until we reach the age wherein our people will treat their children as well as they do their cattle and stock. Then notice:

2. Teachers can note and send to the local physician, all cases of poor eye-sight, (including internal squints or crossed-eyes), nasal obstruction and defective hearing. Here are the principle defects of school children; (1) eye-strain; (2) nose and throat obstruction; (3) discharging ears; (4) deformities, (stoop shoulders, flat chest, and spinal curvature); (5) decayed teeth; (6) poor nutrition; (7) nervous disorders; (8) mental defects; (9) skin and contagious diseases.

3. How or what facilities can a teacher have for the medical inspection: (1) in the examination of childrens' eyes it absolutely requires a distance of fifteen feet and good illumination to make the test trustworthy, and you need test cards and letters. (2) A watch for testing the sense of hearing. (3) A wooden tongue depressor and culture tubes for the testing of the diseases, scarlet fever and diphtheria. (4) Examine the bodies of all children in the class in case of chickenbox and skin diseases. (5) Detect any sneezing and coughing children when measles has broken out, especially among the smaller children. (6) You can examine the teeth, and it has been a late discovery that cancer of the stomach often occurs from not teaching the child to take care of the teeth. (7) Nasal respiration, you can next test by having the child breathe through each nostril separately, and if obstruction exists you can discern it and

*Read before the Carlisle County Medical Society.

advise the parent to see a nose and throat specialist. This is more often the cause of the child not being able to learn, and then we have to retard the child and the parent blames the teacher for not giving their child the proper care, and sometimes the teacher thinks the child is lazy when it is not able to learn because of some of the above named defects. Some teachers appear oblivious to anything short of an epileptic convulsion, or an amputated leg; while we do have trained men and women who teach children rather than subjects.

Next in those communities living under compulsory vaccination law, or a law requiring successful vaccination as a qualification for school attendance, the marks should be examined at the entrance of the children into the schools, and unvaccinated children who have not had the smallpox excluded.

The things that teachers should have in the medicine chest which should be placed in every school room are: (1) A bottle of tincture green soap; (2) boric acid solution, and a boric acid powder; (3) peroxide of hydrogen; (4) zinc oxide ointment; (5) one and two-inch bandages and absorbant cotton; (6) spirits of ammonia and camphor.

4. How can doctors be a benefit to teachers in their work? By coming into the schools and giving lectures on the subject of health, prevention of diseases, and explaining to the children on the different topics that the teachers do not have time to attend to, and sometimes lack of knowledge on the teachers part, and really some of us are afraid if we vary from the spelling of so many words and the working of so many problems in arithmetic we will be expelled from the 'synagogue.' The health of our boys and girls should come first, for the boys and girls of to-day are the men and women of to-morrow, and we as true Americans should not suffer this lack of training, for health, like education and morality, is attained by the daily practice of right habits; physical education should be an integral unit in the school system, so that instruction exercise, and training in health matters, can be enforced along with the study of history and mathematics. The academic work does not suffer because of the introduction of this education into the curriculum, but the beneficial effects of fresh air and exercise upon the mental capacity of the children more than compensate for the time given to it.

5. The aims of physical education are: (1) To improve the general health; (2) to improve muscular power; (3) to give alertness and grace to the body; (4) to improve mentality.

6. The methods of physical education: (1) Drills, in the house and out in the yard when possible; (2) deep-breathing exercises; (3) games; (4) fixed gymnasium if possible.

This will be a stimulus to the interest of older boys.

In conclusion we might say, "hail to the day when we have better school sanitation, better illumination of our homes, and real wholesome lunches served for the children, and in the near future the fresh air schools." We will welcome the time when the doctors, teachers, parents and pupils put their souls and minds into one real cause and that for a better physical education. Then we can teach the greatest lesson of all, that "by the mercies of God," we must "present our bodies a living sacrifice holy, acceptable, unto God, which is our resasonable service." For our Master thought so much of his body that He took it to heaven with Him. Then we must teach the children that the body is the most magnificent structure on earth, in which God has placed the soul.

THE THYROID.*

By U. V. WILLIAMS, Frankfort.

Two years ago I was professionally relegated to the junk pile and since that time I have been prosecuting a private post-graduate course. Compared with the past it seems as if I was living in a comparatively new world as compared with my entrance into the profession, which was under the old galenic regime which continued in the profession for forty years, in the last twenty years a complete transformation has taken place in the profession. Suppose Dr. Hugh Rodman, Dr. Louis Sneed, Drs. Watson, Hatchet and Pythian of the old regime and Drs. Price and Sawyer and Duvall and Dr. W. L. Rodman of the next generation should wake up from their Rip Van Winkle sleep and be called to a case of appendicitis, pus tubes or infected gall bladder, what do you think they would say? What would be their impression if placed before a magic lantern scenes illustrating methods of modern diagnosis, and suppose they read a little of antitoxins, extracts of the ductless glands and ask them about blood pressure, tuberculosis sputum, streptococcus, gonococcus, pneumococcus and fifty others and told them of autogenes, agglutinins, bacteriological serums, opsonines, anti-bodies, toxins and antitoxins, bacterins, serums and diseased micro-organisms and told them we could induce an artificial immunity against scarlet fever, measles, typhoid fever, by injecting a little well prepared horse serum. What would they think of twilight sleep and pituitrin and corpus luteum and all you who knew old Ben Duvall can imagine you hear him turn over in his grave and cuss.

During all the history of the world the use

*Read before the Franklin County Medical Society.

and function of ductless glands were unknown it never occurred to the ancients that these glands had an internal secretion that was through the circulation poured directly into the blood and was directly contributive to metabolism. Esculapius only considered the pituitary gland as the seat of the soul and was responsible for human intelligence. The function of the ovary, the supra-renal capsule and thyroid gland were equally supposed to be useless. The spleen was only supposed to be a diverticulum to hold the blood like a sponge when the surface vessels were contracted in the case of chills or sudden exposure to cold and but little more is known of it to-day and that it does become enlarged during malaria. The same is also true of the appendix, it was regarded as a useless appendage and until within the last three decades its true diseased condition was unknown or that surgery alone afforded relief, perityphilitis, and intestinal obstruction was the ultimate diagnosis. Only as late as 1915 was it demonstrated by Berdozza of Rome who found that the supra-renal capsule was of influence in lactation and we are thus justified in assuming that the cortex of the super-renal represents an important factor like the corpus luteum in the development and general nutrition of animal organism.

Thyroid, like the other ductless glands, has also been a *terra incognita*. To a physician of Antwerp, Hertothpe, we are largely indebted for valuable information in regard to the thyroid and the effect of a diminished secretion of the gland had upon metabolism is so little known, but we do know that a diminished secretion of the thyroid does militate against development and that a child congenitally deprived of this secretion or if by the removal of the gland will not thrive and grow, does not develop physically or mentally and is deficient in both. We do know that the administration of the extract will induce a marked improvement immediately noticeable. We know that when a cell has done its full duty it decays and the detritus must be removed by being taken to pieces and eliminated through the bowels, kidneys and lungs. When the thyroid secretion is deficient the elimination of cell waste is slow and incomplete and thus mucin, fat and other principles will be accumulated on the spot and infiltration and edema will occur in the inter-cellular tissues and we have a condition of enlargement which is not fluid and does not pit on pressure and by reason of this infiltration produces a condition that has been called myxedema. If a patient, swollen with this especial oedema which may exist at any part or all over the body, has administered to them thyroid extract in sufficient quantities of from 25 to 50 grains daily, a speedy reduction of the

myxedema is observable and will sooner or later entirely disappear, and what we still further know, if the extract is continued after the normal is attained no further reduction is at all noticeable, even if the extract is increased many times the efficient dose. The thyroid is a most wonderful conservator of health, it is the essential factor in building up as well as the necessity of pulling down.

In cases of excessive obesity which is an accumulation of fat and mucin in the cellular tissue, and all internal organs as well, owing to a deficiency of thyroid, the trend of treatment is now the administration of thyroid extract in continued doses. We also know that nerve cells may and do thus become infiltrated and by reason of this infiltration in and around the nerve cells impinges by pressure and produces abnormal function causing a species of dementia or melancholy and, if in early life or prenatal, produces cretinism and the administration of thyroid extract has been largely and unfortunately unsuccessfully used, especially in cretinism, but with some success in melancholy.

All infectious diseases call largely upon the function of the thyroid as well as rheumatism, tuberculosis, malaria and syphilis and is a causative factor in myxedema in adult and after life. That thyroid insufficiency produces infiltration and affects the various tissues of the body. The muscle cell, loaded with mucin and fat largely increases its size and impairs its function, is painful and is often mistaken for rheumatism as it affects the tendons and cartilages as well as the muscle. Thyroid extract will relieve this symptom but will not affect true rheumatism, the extract relieves these pains only in so far as they depend upon thyroid insufficiency. The nerve cell is never destroyed by infiltration caused by thyroid insufficiency, only its function is impaired, the extract will relieve this and restore the nerve cell to its normal. Its nutrition and excretion is simply suspended by infiltration and pressure, thyroid insufficiency will cause cardiac pains, neuralgias and angina pectoris and each are amenable to generous doses of thyroid extract. In myxedema we have dizziness, vertigo, migrain, loss of memory, melancholia and loss of muscular co-ordination, sudden falls, resembling petit mal, coma and Bright's disease. Creaking and pains in the joints resembling rheumatism, which was first brought to notice in 1886 by a scientist of Belgium. It also affects the glandular system, the sweat glands and the liver at the seat of infiltration and their functions are thereby abolished, these conditions are invariably relieved by the administration of the extract, no pathological conditions exist that are not affected by thyroid inefficiency by reason of infiltration; it affects the

special senses of sight, hearing, tasting and feeling, the teeth, pyorrhoea, and may be considered the cause of all the ills that flesh is heir to. It affects the mucous surfaces of the body, buccal cavities, air passages, intestines, vagina and the uterine adnexa, the gall bladder and urinary bladder, thus causing pain by contact with the natural fluid therein contained.

Infiltrations impinging upon the nervous ganglia at the base of the heart may be and doubtless is the cause of many sudden deaths from so called heart failure. Asthmatics all suffer from thyroid insufficiency. Many cases of hemorrhagic endometritis would be better served by the administration of thyroid extract than by curettment. Especially is thyroid extract useful in defective lactation, it is also useful in delayed sexual development, in some cases of sterility its effects have been truly miraculous and in repeated abortions in connection with corpus luteum extract it has been considered almost a specific; in excessive menstruation and sub-involution after child birth it has been found superior to all modes of treatment. I cannot in the limited time afforded me in this paper touch upon even the high point of the function and usefulness of thyroids. I consider it the most important and varied organ of the human body as it certainly controls the development and function of all conditions of life and health and disease, of the building up and tearing down of all cell life.

In prosecuting a study of organo-therapy, not only have we touched upon pituitrin, corpus luteum, thyroid, but yet remains to be considered, the spleen, the thymus gland, the suprarenal capsule, the adrenalin, the hormones, the adenoids, the tonsils and the effect of the pleuri glandular extracts.

TREATMENT OF MENORRHAGIA AND METRORRHAGIA.*

By J. F. DUNN, Arlington.

This is quite an extensive subject to undertake to go into the details of, which, in so short a time; therefore, I shall only mention a few of the most important points.

Menorrhagia and metrorrhagia are excessive, abnormal, uterine bleeding, the former occurring at the menstrual epoch, the latter independent of same. And, as they are both commonly speaking, uterine hemorrhages, the only difference being that they occur at different times, they are usually considered as one and the same thing. The condition is not a disease, but only a symptom of a great variety of diseases, as is fever only a symptom of divers diseases, thereby giving rise to a large field of discussion.

The treatment of menorrhagia and metrorrhagia has been conveniently divided into two headings: (1) Removal of the cause. (2) Treatment of hemorrhage independent of the cause. Of course, every physician, when confronted by menorrhagia or metrorrhagia, should at once begin a diligent search for the cause, which is often a difficult thing to determine, and often, I am sorry to say, is never determined. The cause having been located and removed, the symptoms of which this paper treats, at once subside.

Presuming that Dr. Pease, in his paper, has given us the causes of menorrhagia and metrorrhagia, I shall mention briefly the treatment for a few most common ones.

Uterine Causes. 1. Displacements should be corrected by repairing an old perineal laceration and by properly fitted pessaries, which, if they fail, as they generally do in the experience of the writer, should be discarded and a ventro-fixation resorted to.

Pregnancy. Numerous conditions arise during pregnancy which cause hemorrhage, some of which are harmless, others very harmful, and cause a great deal of anxiety, especially on the part of the physician. For instance, placenta previa is one of the gravest conditions we have to encounter in the practice of medicine. As a rule, we treat on the expectant plan until the hemorrhage becomes alarming, in which case we should deliver as quickly as possible, resulting, in the majority of cases, in the loss of the child or mother, or both.

Incomplete abortion can be treated in two ways: (1) By packing the os and vagina with sterilized gauze, and removing same after twenty-four hours, following with a hot bichloride douche, repeating this procedure daily until all the debris have passed. (2) If this fails, curettment should be done with a curette. If this operation is complete, the hemorrhage at once ceases. Some women have a regular periodic flow throughout gestation. These patients generally go on to full term and need little, or no treating.

Endometritis and subinvolution, when due to uterine displacement, should be curetted, together with ventro-fixation, as one operation alone would be useless. In gonorrheal endometritis the cervix and uterus should at once be curetted, removing all the diseased mucous membranes. This should be followed by a hot bichloride douche and pure carbolic acid applied to uterine cavity. The operation, if properly done, not only stops the hemorrhage, but prevents the infection from extending to Fallopian tubes, ovaries and peritoneum. Malignant diseases, such as cancer, sarcoma, benign tumors, etc., should be recognized early and referred to a surgeon.

Certain physical conditions cause uterine

*Read before the Carlisle County Medical Society.

hemorrhage; such as lactation, in which case the child must be weaned. Sexual intercourse in the newly married woman: husband and wife should occupy separate beds. Fright, fear and sorrow should be overcome by sedatives.

Treatment of the Hemorrhage, Independent of Other Causes. When a physician is called to the bedside and finds an alarming uterine hemorrhage, and excessive flow of blood, he must act, and act quickly, regardless of the cause. The quickest and most certain way to stop such a hemorrhage is by the use of the vaginal tampon. Pack the vagina very tightly with sterile gauze, if you have it; if not, and the life of the patient is in immediate danger, use anything you can get hold of; as in a case of my own I had to use strips of an old shirt, and it not sterilized there being not even a fire in the store. Procrastination in a case of this kind is certainly the thief of time. This being done, elevate the foot of the bed and lower the patient's head. Give a saline injection, a hypodermic of morphine, and apply hot water bottles; after you can compose yourself try and determine the cause. But, above all things, keep a cool head. The tampons can be removed daily, a douche given, and fresh ones introduced. This can be continued until the hemorrhage ceases. Patient should be kept in bed and put on a light diet. The bowels kept open. In cases not so severe, often hot saline, or bichloride douches, alone will control, keeping patient in bed or in the room, according to the severity of the case.

Drug Treatment. Ergot is a very valuable remedy, when the condition is uterine in origin. I have found it especially beneficial in young girls just beginning to menstruate, where the flow is excessive. If continued for any length of time, it should be combined with strychnine in order to prevent the depressing effect upon the heart.

Hydrastis is an excellent remedy in those cases due to subinvolution, and chronic uterine congestion. I have found it very gratifying to combine ergot and hydrastis. Hydrastis, used alone, is useful in those uterine bleedings during pregnancy, as it does not interfere with gestation, as does ergot.

Another valuable measure is viburnum. It is useful in cases occurring about puberty and the menopause, especially if associated with dysmenorrhea.

Iron is useful in cases that are caused by, or associated with, chlorosis, anemia, hemophilia, general exhaustion, and debility, arising from excessive lactation.

In conclusion, let me say that menorrhagia and metrorrhagia are very difficult subjects to master in such a manner as to always know at once the cause, what to do and how to do it.

Even the most skilled clinicians are sometimes baffled.

The best advice I can offer is to use good common judgment, study your cases thoroughly and trust Providence for the balance.

THE TREATMENT OF TUBERCULOSIS IN THE PRIVATE HOME.*

By W. L. TYLER, Curdsville.

Statistical facts inform us that 1-7 of the undertaker's business is due to the ravages of tuberculosis, also that not more than 2 per cent. of those affected with tuberculosis can, or do take the advantages of sanatorium treatment.

With these facts in mind, we can readily see that the vast majority of the enormous number of tubercular individuals must be treated in the private home. And since they must be cared for in the private home, their treatment shall be largely under the supervision of the general practitioner. These facts being true, we can readily see that the management of these unfortunate individuals in the private homes so as to get the best possible results, is of more importance to the general practitioner, than the institutional management of such cases. When we consider the small per cent. of consumptives who can or do avail themselves of institutional treatment, we are made to realize that the warfare against tuberculosis is to be waged almost entirely by the general practitioner and the battle ground is at the present in the private home. It is not the purpose of this paper to consider the various means of diagnosis but since tuberculosis always exists before any diagnosis can possibly be made, we should be on the alert for any and all suspicious symptoms, and begin treatment as early as such symptoms arise, since it is in the incipient cases that we can expect results.

It is a very delicate matter to inform an individual that he has a disease whose mortality is so great as in tuberculosis.

When we have suspicious symptoms, previous to the making of a positive diagnosis, it requires skill upon the part of the physician to discipline such individuals so as to get the best results, without rendering a diagnosis. In my opinion this can best be done by explaining to the patient that in such conditions as exist with him, he is very susceptible to the development of the disease. Insist on his co-operation in your efforts to strengthen and fortify him against the development of such a disease. It is a serious thing to diagnose tuberculosis when it does not exist, but it is more serious on the part of both physician and patient to neglect treatment in its incipency, since by neglecting active treatment in

*Read before the Daviess County Medical Society.

this period, we may sacrifice the only chance for recovery. Tact, diplomacy and perseverance on the part of the doctor, will in many instances have placed the patient on active treatment long before a positive diagnosis can be made and by this means many lives heretofore sacrificed may be spared.

A positive diagnosis having been made by all means inform the patient of the diagnosis. Having the confidence of the patient, you can very readily impress on his mind the nature of his disease and the curability of such; but make him fully understand that to get results his cooperation in every detail is necessary. Make him know the whole truth—that his recovery depends on what you can do. When you shall have made him realize this, if it is possible to get cooperation you shall get it. Explain how he owes it to himself, his kinsmen and his community to make every possible effort to recover. Inspire him with the hope of a cure. Make him believe in the curability of his disease and he shall in nearly every case give you such cooperation as his intelligence and environment shall let him.

In my consideration of the consumptives who are to be dealt with in the homes, they can roughly be divided into 3 classes:

(1). The desperately poor in the city or country who must work up to their physical ability for the necessities of life

(2). Those who through the efforts of friends or relatives, may be able to remain at home without labor but can't afford sanatorium or climatic treatment.

(3). Those financially able to enter institutions, but for strong disinclination to do so or for domestic or other reasons prefer to be treated at home.

Each of these classes must in a measure be treated differently or in other terms receive a different application or modification of the same broad principles of hygienic and dietetic treatment, depending upon the environment, social and material condition found in each. In consideration of these classes it is presumable that these cases coming under treatment are in the curable stage of the disease. In the treatment of the first class the very poor, much more can be done than previously. Every poor consumptive in larger cities can now receive a careful examination and be instructed in the way of the cure, applied according to his limitations and be kept under observation. In many cities and towns great good is being done by the district nurse who visits the poor consumptive in his home, and instructs him with the regard to the hygiene of his life and home, and the general care of himself and in many instances provide food and instruct the family how to prepare and administer it.

With the patients of this class it is my conviction that the greatest effort should be di-

rected towards the nutrition. This class of consumptives nearly always have difficulty in securing a good quality of food, also the family are often very deficient in their ability to prepare the food. From such causes this class of patients are almost invariably underfed, and what they do eat is often unwholesome and unnutritious. In many of these cases it may be the only thing needed to promote restoration, is the improvement of the patient's nutrition, through the agency of an altered or increased dietary.

Instruction and training of such patients means much and when they once realize their danger on the one side and the possibility of a cure on the other, they become willing and fervent cooperators with the physician, and the family his eager coadjutors in taking every possible advantage of all favorable conditions.

The best room in the tenement or home for air and light must be selected for the patient's bed room and this made and kept hygienically clean. If possible the patient should occupy it alone. Where possible sleeping or living out of doors may be devised by means of screened porch, tents, shacks or shelters in the yard or if nothing else some form of a window tent.

Many unhygienic conditions in the habits and environment of the patient can be avoided and limited opportunities can be utilized to the utmost. A cold bath can be taken under most any condition. A glass of milk between meals. Crowds in poorly ventilated rooms can be shunned, and so far as possible overexertion, irregular eating, loss of sleep and many other injurious habits can be avoided. This class of consumptives among the very poor, often fail to recover on account of their poverty, and it is among them that we can expect the smallest per cent. of recoveries.

However, alertness, discipline and perseverance on the part of the physician may be the means of securing almost miraculous results in many cases of this class.

With the second class we have larger opportunities, with which to work. They can usually get better qualities of food. If complete rest is indicated for fever or disability, one of the small shacks or shelters can be set up in the yard or on the porch. The nutrition of these patients must receive careful attention and a diet list be prepared rich in proteids and fats. When more active symptoms subside and the general condition is good, the patient should still be kept under the observation of the physician indefinitely.

With the third class, those in easy circumstances, we are in a position to avail ourselves of everything that will make the home treatment as perfect as possible. In such cases some place about the home can be constructed

and especially equipped for his treatment and everything made subservient to the patient's welfare.

In this class of cases the employment of a nurse experienced in the treatment, is strongly advised. The constant supervision and education of the cure through a trained nurse is of great benefit, and the physician is kept informed of the progress of the disease with a minuteness not otherwise possible. The companionship of an agreeable and inspiring nurse is of great value and furthermore they will insist that the nourishment is properly prepared and taken in sufficient quantities. This class of patients, if they will, get all at hand that could be given them in a sanatorium, worth the exception of such benefit as might be derived from change of climate. In the treatment of all classes of tubercular individuals, the physician should see the patient at least once a week and at each visit impress the fact, that results are dependent almost entirely on the efforts and cooperation of the patient. Make him know beyond a doubt that pure air, food and rest are our dependencies, and that success in treatment comes from persistence in their use. Tell him that no drug or therapeutic agent can cure him alone. While inspiring him with hope make him realize that no single element neither food, air, rest, hydrotherapy, nor medicine separately promise any assurance of a cure. Explain to him that only the combined fulfillment of all physiologic and hygienic conditions of life to the smallest detail gives the desired results.

The personality of the physician counts for much in the home treatment of consumptives, and the best results shall be obtained by those physicians who have sufficient tact, kindness, patience, insistence, cheerfulness and judgment to practically apply the general methods of modern treatment to individual cases as they find them.

The Antiferments in Therapeutics.—Fernandez concludes this postgraduate lecture with the remark that the problem of the antiferments is one of pure chemistry. This has been established among other things by the failure of antitrypsic serum as a therapeutic agent, and by the apparently established fact that the relation of the lipolytic index to the antitrypsin is the key to the variations in the tuberculous process. A high lipolytic content seems to be the most reliable expression of the resisting power of the organism in respect to tuberculosis.

CASE REPORT ON USE OF CARREL-DAKIN SOLUTION.*

By FRANK STITES, JR., Hopkinsville.

Patient was a colored man age 30; well developed and nourished with no history of any serious illness and no specific history.

He was brought to the hospital on February 9th, at 2 A. M., with a compound fracture of the lower third of the femur. Patient was put to bed and made comfortable for the night.

The next morning reduction was attempted and cast applied in the operating room with the leg in a double inclined plane.

Apparently good position was obtained and patient progressed nicely for four days with normal temperature and pulse. But on the morning of the fourth day there was a chill lasting several minutes and a steady rise in temperature.

Patient was then sent to X-ray and the report showed fair position but a fragment of loose bone, so it was thought advisable to do an open operation and remove the fragment and at the same time approximate the bone more securely. So on February 20, 1917, the patient was sent to the operating room and the fracture exposed. On examination we found the fragment but instead of being callous it appeared to be undergoing degeneration and appeared almost as a sarcomatous condition. This was removed and sent to the laboratory.

We next approximated our bones and applied gimlets to make certain of our position. It was then thought advisable because of this bone condition and the presence of some free pus around this fracture to begin our Carrel-Dakin treatment so our cast was applied with this in view.

Our incision having been made on the anterior surface of the thigh, a catheter with several perforations was inserted and fixed at the upper margin of our incision. We then made a small incision on the lateral surface and at the distal margin of our field and through this inserted a larger catheter with larger perforations to allow drainage from above downwards.

Our patient was then put to bed and the intermittent irrigation with Dakin's started just six hours after the return from the operating room.

At this time there was quite a little pus in the field of operation and the patient's temperature was 102 degrees and pulse 120.

Irrigation was started from a quart container raised just four feet above the bed and allowed to run for one hour. It was then dis-

*Read before the Christian County Medical Society.

continued for two hours and then repeated in the same manner.

This treatment was used continuously during each twenty-four hours and each day the microscopical reports showed a diminished number of bacteria in the field. On the 12th day there were only five bacteria reported on our whole field so it was decided to discontinue our irrigation the next day as the tissues looked healthy, there was no temperature and the patient was free of all toxic symptoms. The gimlets were removed the 15th day and the day following all irrigation ceased and granulation progressed nicely with no further trouble.

The laboratory report on the bone removed was: Osteochondroma with no evidence of rapid growth. But to the present time there has been no further trouble with the bone and only the week before I left Louisville I saw the patient hauling garbage for the city and walking with only a slight limp.

Just a few words on the preparation of the Dakin solution and the Carell method of using.

Dakin's solution was one of the first to win favor in the European war and even to-day has proved more efficient than all others. It is composed of 140 grams of dry sodium carbonate in 10 liters of water; 200 grams of chloride of lime are added to this and after thoroughly mixing the solution is filtered through cotton and to this solution is added 40 grams of boric acid. This is only good for one week's use and it is very important not to have a preparation older than 5 to 7 days.

Fully as important as the solution is the method of applying it so there are several points to be watched.

First, be sure after connecting your drainage that the solution won't overflow the edges of your incision and come in contact with the skin for it is rather irritating to this area. Guard against this by the use of yellow petrolatum on cotton and the regulation of the flow.

Second, see that it is not a continuous irrigation, but an intermittent one.

Third, see that the alkalinity of the solution is not too strong and lastly see that the dressing over this is changed daily.

Since atropin invariably controls passive hemorrhage it must do so by actively stimulating the vasorelaxants.—Am. J. Cl. Med.

The prevalence of thyroid cancer among fish fed upon liver, and its cessation when set free makes a man who likes liver feel queer.

CLASSIFICATION OF THE ANEMIAS WITH SPECIAL REFERENCE TO THE DIFFERENTIAL DIAGNOSIS AND TREATMENT OF THE AD- DISON-BIERMER TYPE.*

By ROBERT L. BONE AND A. L. THOMPSON,
Madisonville.

Our choice of this subject for a paper is dictated largely by the feeling that the importance and frequency of the graver types of anemia in every day work is not generally recognized by the general practitioner. Many years as general practitioners, with a fairly large experience as consultants, has convinced us that this statement is very conservative; in fact with an experience of twenty-five or thirty cases of the pernicious type, extending over a period of fifteen years, not one was correctly diagnosed. We have every reason to believe that such experience has fallen to the lot of all who have done much hematological work, and with this in mind, together with the fact that a certain per cent. of the grave hemolytic types are curable if recognized in their earlier stages, and properly treated, we feel justified in consuming the time necessary in a hurried review of the more recent important facts, both in diagnosis and treatment, brought out by the many workers in this field.

With the limited amount of time at our command, and the desire to make the paper as practical as possible, we shall of necessity exclude many vital points in which there is still far from unanimity of opinion among the different schools. We shall therefore, merely give the classification which at the present time seems to be the most favored by the majority of hematologists, confining the remainder of our remarks to the class known as the hemolytic anemias, and more especially the Addison-Biermer type, avoiding as far as possible the many still debatable and undecided questions and theories as to etiology. The fact that the etiology of many forms of anemia is still in a nebulous state makes any satisfactory classification impossible at the present time. Until quite recently the division of all anemias into primary and secondary was generally accepted as satisfactory, meaning by primary anemia a disease of the blood itself, and by secondary anemia, an alteration in the blood due to disease of some other organ, pernicious anemia and chlorosis coming under the primary class, the other types under the secondary class. But in the light of more recent discovery, we now know that there are no primary anemias, that every anemia must be secondary in type, therefore we have had to discard the above simple classification. Unfortunately, we have no en-

*Read before the Christian County Medical Society.

tirely satisfactory classification, nor shall we have until we learn more of the etiology of certain types. Most hematologists accept Morawitz's classification as the most satisfactory from the point of view of our present knowledge, which is as follows:

(1). Anemias due to increased blood destruction.

1—Post hemorrhagic:

- (a) acute
- (b) chronic.

2—Hemolytic:

(a) due to hemolytic poisons—nitrobenzol, potass. chlor. etc.

(b) due to bothriocephalus latus.

(c) those due to unknown causes.

(1)—acute, generally with leukocytosis (rare).

(2) Chronic-pernicious anemia (Addison-Biermer).

(d) due to puerperium, syphilis, malaria and, rarely, carcinoma.

(2). Anemias due to deficient blood building.

1—Myelopathic—due to encroachment upon bone marrow by tumors, osteosclerosis.

2—Hypoplastic, for example:

- (a) Wasting diseases, inanition.
- (b) Due to tumors of various organs.
- (c) Aplastic or aregenerative anemia (cause unknown).

(3). Chlorosis.

(4). Anemia of infancy.

As it is our purpose to confine this paper to the hemolytic types, dwelling principally on the type known as the Addison-Biermer or pernicious anemia, we shall dismiss the other forms without further consideration, only referring to them when it comes to points in the differential diagnosis between them and the hemolytic types.*

A few words in explanation of the classification. By the term hemolytic is meant there is taking place within the body an excessive destruction of the red cells, principally in the liver and spleen, shown clinically by the dark color of the urine, subicteric color of the skin and increased amounts of urobilin and urobilinogen in the urine.

We shall not refer very briefly to the other types of hemolytic anemia in order that we may more intelligently grasp the different diagnostic points in the pernicious type.

(1). The acute hemolytic anemia of unknown origin is the disease known as leukemia, and is characterized by certain of the features of both pernicious anemia and myeloid leukemia; pernicious anemia being suggested by the embryonic character of the red cells, and leukemia by the leukocytosis and numerous myelocytes.

(2). That form of hemolytic anemia due to bothriocephalus latus infection. At this

juncture we desire to say that it is of the utmost importance to differentiate between the hemolytic types for the simple reason that this type is readily curable if the cause is removed before too great damage has been done. This type is indistinguishable in its latter stage, from the idiopathic type from the blood picture alone. It is only by the demonstration of the ova in the stools that one gains a clew to its nature. In the earlier stage the eosinophilia will serve to put one on their guard, but unfortunately in the more advanced stages this disappears.

(3). Myelopathic anemia. In this type there is deficient blood building, due to encroachment upon bone marrow by processes which choke the activity of the marrow, as tumors and osteosclerosis. These processes have many points in common with pernicious anemia but can always be differentiated by the blood examination. The leucic type can be differentiated by the history and Wasserman test. The malarial type by the history and discovery of the plasmodium. The plastic type by the much more rapid progress of the disease, with constant absence of any evidence of regeneration on the part of the bone marrow.

Anemia Pseudo-leukemia Infantum. As the name implies, this is a disease essentially of infancy, and is associated with splenomegaly, an unspoken embryonic character of the erythropoiesis, myelocytosis and the constant presence of large numbers of nucleated red cells. Thus it is readily distinguished from the idiopathic type. With this necessarily brief and imperfect citation of the diagnostic points of difference between pernicious anemia and the other types with which it might be confounded, we shall pass on to a brief review of the criteria that permit the diagnosis of pernicious anemia to be made with a more than fair degree of certainty.

Etiology. While there are numerous and diverse theories as to the cause of pernicious anemia, we may as well admit that we are absolutely ignorant as to the cause of this disease. We are sure that it is a disease pre-eminently of middle life and past; that it affects the rich and poor alike, and that it is distributed all over the world. The rest is pure theory and lacks confirmation. One fact stands out clearly, namely, the disease is due to increased blood destruction, due to some poison that either enters the body or is provided from within, and that is as far as our present knowledge justifies us in going. The nature of the hemolysins, as well as their origin, is as yet entirely unknown.

Symptoms. The patient complains of weakness, fatigue, headache, dizziness, fullness in the ears, and palpitation. There is usually marked anorexia, with either diarrhea or con-

stipation. On inspection the most striking feature is the peculiar lemon color of the skin in cases that are sufficiently advanced to bring the patient to the consulting room. The appearance of the skin is quite different to the pallor of the chlorotic or nephritic, or the gray pallor of carcinoma. Examination of the gastric juice invariably reveals achlorhydria, and usually complete achylia gastrica; and since the same condition is found in carcinoma ventriculi, also associated with pallor, it is no wonder that the two conditions are not infrequently confounded. Symptoms referable to the spinal cord are quite frequent, and are not infrequently confounded with tabes dorsalis, but the following diagnostic points will enable the careful observer to distinguish between them: the majority of cases of cord involvement in pernicious anemia sooner or later present the picture of combined sclerosis, that is an extension from the posterior to the lateral columns, but as long as it is confined to the posterior we have all characteristic symptoms found in tabes, namely, lost reflexes, lost joint and tendon sense, ataxia and anesthesia, but with these important differences in tabes, the Argyll-Robertson pupil, the spinal fluid changes and the lack of blood picture. Pernicious anemia presents the typical blood picture without the pupil or spinal fluid changes. In all other respects the symptomatology of the two diseases are identical, therefore, we should be on our guard, and in every cases presenting the syndrome of tabes, make a blood examination, thereby saving ourselves the humility of the too infrequent mistake of diagnosing the cord symptoms of pernicious anemia as tabes. Just here we desire to call attention to one very practical point which frequently comes up in treatment of this type of anemia by the arsenical preparations, namely, mistaking the cord symptoms for a beginning arsenical neuritis.

Remissions. One of the most remarkable features of the disease is the tendency to remissions; and this feature makes it very difficult to estimate the value of the various methods of treatment advocated. A patient may have three or more attacks before the terminal one.

Duration. The disease lasts from a period of a few months to two or three years. It is doubtful if an actual cure ever occurs.

While the diagnostic points given above will serve to arouse the suspicion of a careful clinician, the final diagnosis will depend on the microscope in the hands of a competent and careful observer. The following data obtained by a thorough blood examination will, in the vast majority of cases, enable one to make a positive diagnosis: A constant and marked anisocytosis is a very striking characteristic of this disease, associated with a

marked poikilocytosis. Microcytes and megalocytes greatly predominate, relatively few normocytes being present. The number of erythrocytes are very much decreased. Several of our cases had less than one million per c. m., and one case gave a count of only 350,000 per c. m. Of the total number of erythrocytes the megalocytes equal, and at times exceed, forty per cent. in many cases, and practically always exceed twenty-five per cent. The hemoglobin is not decreased in proportion to the decrease in the red cells, hence the individual cells are of good color, in marked contrast with the pallor of the cells in chlorosis and in secondary anemias. The color index is always high. We recently saw a case in which the index was 2. In chlorosis it is always minus.

Polychromasia and basophilic granulation will always be in evidence at some stage of the disease, as will also nucleated red cells, especially megaloblasts, but it must not be forgotten that there are, in some cases, periods when signs of regeneration are lacking in the blood, therefore, the Addison-Biermer type of anemia could not be excluded by the absence of these conditions, on a single blood examination. In our experience, leukopenia has been a striking feature and this is at the expense of the polymorphonuclear neutrophiles, with a relative increase in the lymphocytes which often make up half or more, of the total white count. It is important to remember that one will also find a leukopenia in malaria, but usually there is an increase in the large mononuclears, whereas in pernicious anemia these cells are diminished. We have no more than one occasion found a leukopenia of 2,000 per c. m. in this disease, but, while leukopenia is the rule, it must be remembered that with some coincident infection one will find a leukocytosis. The blood platelets are diminished in number—a striking contrast to the increase in chlorosis. Another important point to keep in mind is that during the blood crisis of pernicious anemia there are large numbers of nucleated red cells. This might be mistaken for the myelopathic type; but if one remembers that in this type there is an increase in the neutrophile leukocytes, and myelocytes, and that the great increase of nucleated red cells in the blood crisis of the Addison-Biermer type is of short duration, one will not go far astray in differentiating between the two diseases. In the aplastic type there is a great diminution in the number of red cells, with no evidence of accelerated erythropoiesis; in addition to this there is no anisocytosis, and there is a decided tendency to a minus color index.

Treatment: As yet no known method of treatment will cure pernicious anemia. At present the most flattering results seem to be obtained from the use of massive transfus-

ious of whole blood, followed by splenectomy with subsequent transfusions, and the administration of some of the arsenical preparations. One of our patients, who was practically moribund, responded admirably to the use of about 100 c.c. of defibrinated blood, with the subsequent administration of two grains of Soamin, hypodermically, every second day, the hemoglobin increasing from 25 per cent. to 80 per cent., and the red cells from 800,000 to 4,000,000 in the course of one month. Splenectomy, while usually followed by immediate good results, is still in the experimental stage, and good judgment is essential that the pendulum might not swing too far in that direction. Some of the contraindications to splenectomy are: mental, cerebral and spinal cord symptoms, the presence of an aplastic bone marrow, a red cell count of less than 1,500,000 and hemoglobin less than 35 per cent.

The technic of transfusion has been so simplified as to make it possible to utilize this valuable procedure in every case. The selection of a donor for this purpose is important. When possible, young, robust adults should be chosen, and one must be absolutely certain that the blood of the donor is compatible with that of the recipient, and that the donor be free from infectious diseases. It is necessary in every instance to test the blood for hemolysins and agglutinins, for which there are several methods, the one appealing to me most being that of Lindeman¹, which is as follows:

The red cells of patient and donor are washed three times with normal saline solution; variable quantities of patient's serum are placed in three separate small test tubes. To each of these are added 0.25 c.c. of a two per cent. suspension of washed blood cells of the donor. The same is done with the donor's serum and patient's cells. Controls are made also with donor's cells in normal saline solution and patient's cells in normal saline solution. The total volume in each tube is raised to 0.5 c. c. of volume with normal saline solution. The test tubes are incubated in a water bath for a period of two hours, and readings are made. They are then set in the ice box over night and readings are again made the following morning. When a case is urgent the ice-box test is eliminated. This should be done only when absolutely necessary by the extreme condition of the patient where time is the important factor.

Technic of Transfusion: The most simple and satisfactory method is the citrate method.

Apparatus and Reagents Required: A graduated container of about 1000 c.c. capacity, with a mouth of such size as to accommodate a No. 10 rubber stopper, in which are two perforations; two glass tubes, bent at right angles, to fit the perforations; two rub-

ber tubes to connect with the right angle glass tubes, in one of which is interposed a glass trap filled with cotton; a platinum iridium needle of ten to fourteen gauge; a salvarsan outfit, some 0.8 per cent, sodium chloride solution and some 2.5 per cent. sodium citrate solution, made up with sterile distilled water. Needless to say that everything must be sterilized. The container is rinsed out with the sodium chloride solution, and the required amount of citrate solution (about 10 c.c. to each 100 s.c. of blood) run in. The donor and recipient are prepared in the usual way for venipuncture, the stopper containing the right angle glass tubes is placed in the mouth of the container, rubber connections made, vein of donor punctured, after applying a tourniquet, and the blood allowed to flow directly into the container. The container must be agitated in order to mix the blood and citrate solution. The citrated blood is now transferred to the salvarsan outfit, which should also be rinsed with the sodium chloride solution, the vein of the recipient punctured and the blood allowed to run in. There are no certain number of transfusions to be given; each individual case is treated on its own merits.

Other essentials in the treatment of this disease, as you well know, are absolute rest in bed for an indefinite period, with an abundance of pure air and good nourishing food, and tonics of iron and arsenic, especially the latter. Dilute hydrochloric acid might be of some value, since there is usually present achylia gastrica. However, with the utilization of all the methods at our command, we can, at best, only hope for a temporary cessation of the symptoms, death sooner or later, closing the scene in all cases.

1. Lindeman: Reactions Following Blood Transactions by the Syringe-Canula Method, *Journal, A. M. A.*, February, 27, 1916.

Determination of Carbon Dioxid.—A simple one-piece apparatus is described by Van Slyke for determination of the carbon dioxid or carbonate content of water solutions. It has been designed especially for analysis of 1 c.c. samples of blood plasma, but is applicable to water solutions in general as well as to the determination of dissolved gases other than carbon dioxid. The entire analysis is performed at room temperature, requires about three minutes, and without especial precautions is capable of accuracy to within 1 per cent of the amount determined. A micro-apparatus designed on a similar principle is described. With it the carbon dioxid content of 0.2 c.c. of plasma can be determined with an accuracy of one volume per cent.

TYPHOID FEVER.*

By JOHN B. WHITE, Cave City.

You will pardon the evident shortcomings in this paper when you remember that I was booked for a paper on another subject to-day and have had only six days in which to write this and attend to my daily work.

Perhaps all I shall say is familiar to you, but I hope to say something that will call for criticism and that no one will withhold it, as we profit more by criticisms than by indorsements.

The predisposing causes of typhoid fever are early adult life (15 to 30 years), fatigue, individual susceptibility, scarcity of water in wells and springs, as is common in late summer and early fall months.

The exciting cause is the typhoid bacillus found in the blood, sputum, stools, and urine of patients and gaining entrance through the mouth to the alimentary tract by means of contaminated water, milk, meat, oysters and uncooked vegetables and fruits.

Food, fingers and flies are the principal carriers of the infection. The air is never impregnated with the fever germ and it is this that gives the careful nurse comparative immunity.

The pathology as classified by the writers is:

- 1st. Stage of infiltration,
- 2nd. Stage of necrosis, softening or sloughing,
- 3rd. Stage of ulceration,
- 4th. Cicatrization.

The symptoms are familiar to all—general malaise, vertigo, frontal headache, disordered digestion, muscular weakness and epistaxis.

An abrupt beginning with chill and high fever indicates the presence of malaria or some other toxemia apart from typhoid fever.

The duration of these premonitory symptoms varies from a few days to two weeks.

In the first week we have a temperature increasing day by day from 99 to 100 degrees in mornings to 101 to 105 evenings, corresponding pulse, listlessness, headache moderate or severe in proportion to the severity of the infection, nausea, coated tongue sharp-pointed, with red borders and tip and getting dry, abdomen moderately distended with tenderness and gurgling in the right iliac fossa and from the sixth to the eighth day lenticular rose spots appear on the abdomen, chest or back.

In the second week all the foregoing are exaggerated: there are nocturnal delirium, tender, tympanitic abdomen, fast, compressible, dicrotic pulse, hacking cough with distinct bronchial rales, subsultus tendinum, sordes, the tongue is dry and red, there is

difficulty of both speech and hearing, vision is disturbed, the spleen is enlarged.

In the third week we find amelioration of all symptoms in mild and moderate cases though in some this may be noted in the second week. The fever becomes more remittent, the first decline being noted in the morning though in severe cases the symptoms grow worse, prostration is extreme, stupor more marked, tongue dry, cracked and covered with brown crust, sordes collect, lips are cracked, pulse rapid and feeble, respiration fast and shallow, defecation frequent and often involuntary, bed sores develop. 'Tis here the death certificate so often closes the scene, but has often been said a man may recover from a lower state brought on by typhoid fever than from any other cause.

Then comes that tedious, slow, trying, stage on both patients and attendants, marked by the stage of subnormal temperature after the subsidence of which convalescence sets in with that tedious process of recuperation aided by tonics and "Doctor, what can I eat?"

Intestinal hemorrhage is most common and critical of the complications met with and generally occur in the ulceration stage and is marked more particularly by sudden fall in temperature to normal or below. It is of variable severity. It may be from an oozing from surface of ulcers, from erosion of blood vessel or from that most fatal of all complications—perforation—peritonitis adds to the gravity but is not necessarily fatal.

Then we find lobar pneumonia, hypostatic congestion, bronchitis, acute nephritis, bed-sores, ulceration of the tongue and mucous membrane of the cheek.

As sequelae we have paralysis, post febrile insanity, acute nephritis, and tuberculosis.

Of varieties we all understand what is meant by the abortive, mild and ambulant typhoids though I never have the latter because I will quit any case of typhoid that will not go to bed and stay there.

Typhoid in children is marked by predominance of nervous symptoms.

Relapses are generally due to errors in diet or exercise before the toxins have been fully eliminated.

My paper is growing long and I pass differential diagnosis to the laboratory with mere mention of those conditions with which it may be confounded. They are typhus, enteritis, peritonitis, meningitis, ulcerative endocarditis and concealed suppuration.

A positive prognosis can not be made. Slight diarrhea, moderate fever and little delirium are favorable, while severe diarrhea, early high fever brought on by the severity of the toxemia, cardiac exhaustion, marked

*Read before the Barren County Medical Society.

stupor and repeated hemorrhages are unfavorable.

It has always been a mystery to me that the mortality from this disease as well as from that from pneumonia is greater in hospitals than in private practice, being fully two in former to one in latter.

I leave the explanation for discussion.

Prevention is of first importance and aside from antityphoid serum for those exposed I must say the sanitarian stands far above all others in his effort to stay the ravages of this most dreaded malady. But I must be brief and epitomize.

Purity and cleanliness must be the watchword of all who escape it. Sanitation known to us all, is the only hope to eradicate and exterminate this and similar diseases.

As to general management of patient—he must be kept quiet in a clean comfortable bed, wear but one garment—a gown buttoned from top to bottom. No unnecessary persons in the room, plenty of pure air, not too much very bright light, and he must be made to feel as comfortable as circumstances will admit. Give plenty of good water. Crushed ice is much relished, and give it rather freely, although it is objected to on account of the reaction which follows.

The diet should be liquid and contain a minimum of sugar and starch, should be easily digested and assimilated readily.

Daily sponge baths should be given for their hygienic effect, hydrotherapy used to reduce high temperature. The temperature of the water should be such as is most agreeable to the patient, though in extreme cases ice water or the ice-pack may be used.

By way of medicine I believe we all give too much of it in this disease, though we should see that elimination be kept up throughout. I find calomel in small repeated doses the best agent for cleaning the alimentary canal during the first week, and if given in 6 to 8 hourly 1-8 grain doses every two or three days even to the third week is very efficient in keeping down the fever, preventing delirium and tympany.

Of intestinal antiseptics salol is the favorite with most doctors, with the sulphocarbolates a close second. The selection of agent to be employed is governed by circumstances.

An alkaline treatment is best when there is not too much redness of the tongue but when it is very red, give the mineral acids, sulphuric in diarrhea and nitro muriatic in constipation.

Watch the heart and give such stimulation as may be necessary but do not over-stimulate. Strychnine is generally sufficient, but it may become necessary to use others and digitalis stands at the head of the list.

If the bowel elimination is kept up from the beginning diarrhea is not apt to give

much trouble; but should it become necessary to check it, try first high enemata, then such agents as sulphocarbolate of zinc, turpentine, sulphuric acid and make opium a last resort.

Epistaxis is generally relieved by cold to the face or pressure on the artery furnishing the blood but it may be necessary to plug the nose.

The cardiac and pulmonary complications should be met by using as far as permissible such means as are used in like conditions aside from typhoid fever.

In hemorrhage of the bowels to keep the patient absolutely quiet is of first importance, and opium is the best agent we have for that. Ergot may be given in doses not to upset the stomach. Ice on the abdomen is a safe and good remedy.

Quietude and cleanliness should be the watchword in every room where there is typhoid fever.

MEDICINE OF THE FUTURE.*

By W. J. GERDING, Newport.

The tendency of the times is toward health conservation. Sickness or ill-health must be considered the result of carelessness or indifference in regard to matters pertaining to proper living—meaning temperance in all things—and the failure to detect early any deviation from the normal and its correction.

A regular periodic examination covering every part of the body should be undertaken, or at least the important organs should be gone over by a physician competent of observing the slightest defect and of judging or interpreting its importance and future tendency.

To bring about, to encourage and educate the public along the lines suggested, is not in itself a matter easily accomplished or practiced; in fact, a concerted action by the proper persons—a vigorous propaganda as it were—must be conscientiously and persistently pursued not only at medical gatherings, or by articles published in the medical literature, but in lay gatherings, in the public press and by public lectures.

Defects of vision corrected early will save untold inconvenience, if not suffering, later. The nose, as well as the accessory sinuses, the throat, teeth and gums require a searching investigation in order to discover and correct or eradicate any hidden nidus or rendezvous for germs which may cause subsequent infection of some distant organ at some future time.

The important organs such as the heart, lungs, and kidneys, if found normal, should be kept so, by correcting anything in the per-

*Read before the Campbell-Kenton County Medical Society.

son's habits which might affect them. A hazardous occupation such as a dusty atmosphere or one surcharged with irritating chemical fumes or where the person is subjected to constant dampness, cold or heat; long hours in a poorly ventilated factory or office; too sedentary employment; or on the other hand employment requiring too much physical strain, etc., should also be corrected.

A quiescent and in itself innocent roughness of the valves of the heart causing but a slight murmur, harmless in itself, may take on a most malignant change if the person's habits have not been curbed.

The blood-pressure always tells us something, especially if persistently high or low, (the systolic and diastolic must be taken to make it complete). The urine test, complete as to quantity, specific gravity, chemical ingredients and microscopic findings, will tell the true observer much.

Any suspicious sore, eruption, tumor or ulceration upon the body, or in the rectum, vagina and uterus, must also be noted and studied. The individual's present habits must be inquired into and corrected if necessary.

The writer has devised and had printed, blanks suitable for the purpose of recording the findings in the examination suggested above. These cards when filled out show at a glance the present physical condition of the person examined, and if any abnormality is found it is noted and the proper advice given for its correction. The person examined is given a card and a duplicate is kept for future reference.

PRESENT PHYSICAL CONDITION.

Name, Robt. Daniels. Age, 37. Date, 6-7-17.
Weight, 138 lbs. Gain, —. Loss, 6 lbs.
General Appearance, sallow skin, emaciated.
Heart, Normal in size, valves normal.
Lungs, normal.

Kidneys, Urinalysis, Slight amount albumen, granular and hyaline casts.

Nervous System, Occasional insomnia.

Head, Nose, Throat and Accessory Sinuses, chronic pharyngitis.

Teeth and Gums, Teeth bad. Pyorrhoea well developed.

Skin, Nothing significant.

Abdominal Organs, Liver tender and slightly enlarged.

Blood Pressure, Systolic, 150; Diastolic 112.

Habits, Excessive use of alcohol and tobacco.
Very hard work.

Occupation, Outside carpenter.

Remarks: Must discontinue alcohol and tobacco. Avoid heavy lifting, have teeth and gums treated, also pharynx.

Report for Re-examination 9-7-17.

Dr. Gerding.

In the chart here presented it will be seen

at a glance that Mr. Robt. Daniels is somewhat below par, though he considered himself in good physical condition when examined. His skin is not healthy in appearance, and he has a worn expression. He is six pounds below his usual weight. His heart is normal both as to size and action. The urine under the microscope shows a number of granular and hyaline casts. A trace of albumen was noticed. The bloodpressure as you will see is somewhat higher than normal for one of his age. The liver is slightly enlarged and tender. Mr. Daniels admits of smoking, and using alcohol to excess. He also claims that he works very hard and lifts heavy. After the proper advice and suggestions, he was asked to report in three months for re-examination.

You will readily see from this examination, that Mr. Daniels is not absolutely healthy, no doubt due to hard work and excessive use of alcohol and tobacco. Without changing his habits he bids fair to develop an nephritis, hepatitis and possibly an early arterio-sclerosis.

Persons found in good condition when examined and whose habits are normal may be examined again in six months or a year.

The writer is of the opinion that if this sort of work is encouraged and generally adopted, the physician will soon accustom himself to thoroughness in making examinations and thus be an important factor in his community, preventing much illness and saving many lives by his timely advice and suggestions.

PROGRESS OF INTERNAL MEDICINE DURING THE YEAR 1916.*

By E. B. WILLINGHAM, Paducah.

I accept this honor with hearty thanks. It has equally touched and pleased me, the good will of my professional comrades has through life filled the measure of my ambition, and I have been nothing fraternally, if not a working doctor. It affords me satisfaction to tell you that it came as I was rounding out a quarter of a century in the service, and with undiminished fidelity to the cause and undaunted faith in the goodness of God and the greatness of our profession; I shall ever cherish this compliment as a stimulus to my future efforts in striving to reach the half mark. If I were to take a retrospective view of internal medicine in this 25 years, I could point out some wonderful achievements. Scientific discoveries with specific therapeutic effect on disease, but to take them as a whole they are all too few, and in reviewing the progress of internal medicine in the year 1916, it will be my aim to in some measure show that the pendulum is swinging back,

*President's address delivered at Southwestern Kentucky Medical Association.

and that the general practitioner is awakening from that day dream of a time when the scientist would furnish a specific diagnostic test, or a sample of sputa, or blood, or secretion, or excretion of the body could be tested, and forthwith a specific cure prepared and a dose which when administered at stated intervals would cure said disease.

This mechanical form of diagnosis and therapeutics, has caused a neglect of our physical diagnosis and therapeutics, and possibly has added to the already too great tendency to therapeutic nihilism. The scientists are convinced by their latest developments that the goal of specific medicine is a long way off, except as I have said, in a very few diseases.

A short review of tuberculosis will prove this point, in spite of all laboratory efforts both diagnostic and therapeutic we are forced to the conclusion that a thorough physical examination is the only way to arrive at a diagnosis sufficiently early to get the best results in the treatment, the compliment fixation test, the intradermic tuberculin, Moro, Von Pirquett, Calumet tests, are all without value, unless taken in conjunction, with other findings; being positive in only 30 to 35 per cent. of all clinical definite cases. Practical results have proven that after the bacillus can be found in the sputa by microscope the chances for good results in treatment have passed. The wonderful powers of nature and a little credit for empirical medication can not be gain said when it is positively stated that only 15 per cent. of infections go on to destruction of the host, scientific opinion in regard to prognosis in children is more favorable than was once supposed, the survival, of 30 to 35 per cent. indicating that even at this age period pathological lesions may be logicalized and completely healed. In regard to treatment all authorities are agreed that our efforts should be directed towards preventing infection and recommending an early and thorough physical examination of every one exposed to infection, isolation and that all efforts to build up physically those who are below normal. Bouney, in calling attention to the abuse of bacterial vaccines in the treatment of this condition says that while it is of benefit in well selected cases (which are few in number) it should never be used routinely. A careful adjustment of dosage is vitally important, and while the gain in a few is sometimes impressive the proportion of those to improve is disappointing and not infrequently the vaccines are shown to possess vast possibilities of injury. Shively thinks tuberculin therapy has a large field in a special group of cases, and is clinical and not laboratory and the physicians best guide is a carefully recorded observation of his patient's temperature, pulse, weight and general

condition. There is only one conclusion to be drawn from these statements coming as they do from high authorities, and representing the differences of opinion throughout the profession, and that is one cannot doubt that there is some value in tuberculin therapy, but its proper application is so very intricate and its margin of safety so very fine that it can never be used by men in general medicine, and many of us are apt to live through its second therapeutic death. It is to be hoped that the experiments now being conducted with the object of discovering some chemotherapeutic agent which will do for tuberculosis what Salvarsan has done for syphilis will eventually be crowned with success.

The work of Akin and Cooper with arsenic compounds and Otani with cyano cupral will be watched with interest still yet no importance can be attached to their investigations. The scientific investigators have obtained results in the past year which has proven to them that vaccines have not been giving results formerly attributed to them, for instance that in some cases the intravenous injection of vaccines, also other protein substances, would induce in typhoid and other infectious diseases crisis and prompt recovery. This new development or mechanism is not understood, but cannot be interpreted as the action of vaccines. Scientists believe this involves something more than the specific stimulation of the production of antibodies. This has excited interest in the non-specific factor in the treatment of diseases. Hekton believes we are entering a new field in the treatment of infectious diseases. Again the factor which determines the localization of bacteria, after they enter the circulation is obscure. Rosenow's investigations throw some light on this subject. He has shown that streptococci from various diseases often show a most striking affinity for the organ or tissue from which they were isolated. The appearance at necropsy is very striking and the injection of a very small dose was sufficient to show this elective localization. The bearing which these results have on the specific treatment of infectious diseases is evident, the injection of a streptococcus vaccine without regard to the infecting strain is far from an exact method of treatment.

Possibly autogenous vaccines have more nearly approached the ideal in this line of work. They state, however, that these developments do not involve specific vaccines for prophylactic purposes. Pertussis seems to be one exception to these developments, the New York Bureau of Laboratories are preparing a vaccine according to Luttinger which, when given early, continues to give good results, both as to prophylaxis and treatment in the hands of the whooping cough clinic, health officers and

many practitioners, however, in their report of cases treated, the margin of gain is so small over the old line of treatment that I doubt if it will ever be generally adopted except possibly as a prophylactic. The medical treatment of pneumonia seems to receive very little attention in the current literature. The specifics having been tried out, and their utter uselessness proven. Tice and others speak very favorably of the blood pressure pulse ration in pneumonia, as explained in Gibson's rule, viz: When the arterial blood pressure expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute, the fact may be taken as a favorable condition, while the converse is equally true. They further state that aside from the prognostic significance the blood pressure pulse ratio was of satisfaction as a guide to the administration of cardiac stimulants and that the administration of one or two intravenous injections of digitalis was sufficient to reduce the pulse rate, increase the blood pressure and convert an unfavorable into a favorable condition in a very short while. Even in my short experience I am convinced of the fact that all the infectious diseases are losing their malignancy like smallpox and measles. Both by acquired and hereditary immunity they will continue to grow weaker as time goes on except tuberculosis and possibly pneumonia which will continue to reap their harvest from the physically weakened due to multiplied causes, as every few years new and more formidable diseases make their appearance into our midst, and the old diseases evade the scientists in their efforts to produce a preventive or cure. If we should take a superficial view of these conflicting statements it would appear, that the medical treatment of disease is in a chaotic state, but our recent experience should only serve as a warning to us in the future, which has proven that it takes time, backed by clinical test to separate the pseudo from the true scientific measures. Moreover the man that keeps up with the procession has nothing to do but work, dig and even with the hardest work, one head cannot contain all of medicine. But the general practitioner is in the front ranks in the trenches as it were, and it is expected of him to advise, and recommend, or treat, all the conditions to which the human body is heir, but in these modern times with modern medicine as well, we have the general surgeon and the specialist of nearly every kind who are ready to take the burden off our shoulders and upon whom we must rely for help, for it is evident that the man who stands alone today in medicine is like a ship at sea without chart or compass, and with submarines lurking on every side. Therefore, with the best interests of our clientage at heart we must ask counsel. I want to make one suggestion

which I think will go a long ways to modernize medicine that is to do away with secret consultation. This is an old antiquated practice that was born in ignorance, and flirts with ethics, and winks at quackery, and is not in keeping with the present day propaganda, for preventive medicine has always been a barrier to public confidence which the profession really deserves, most assuredly needs and of which we have very little.

BERI-BERI, OR ENDEMIC MULTIPLE NEURITIS, WITH REPORT OF TWENTY-ONE CASES.*

By F. M. TRAVIS, Eddyville.

This being a sub-tropic disease and not prevalent or common to this country, and having never had the privilege of a postmortem upon the cadaver, I will be able to give you but little of its pathology, and that, I have gathered, chiefly, from a research of current literature found upon this subject.

The best authorities say that multiple neuritis is an inflammatory degenerative condition of the nerves. And that it attacks chiefly the medullary sheaths and axis cylinders. It is mainly the peripheral nerves that are affected. In the later stage of the disease, we find the degeneration of the muscles, with a serous effusion into the tissues and serous cavities.

Twenty of the twenty-one cases, I have to report, I found serous effusion into the tissues. There was one only that did not have the edema of the legs, scrotum, penis, and back. Some almost to the extent of a general anasarca. In eighteen, the swelling was confined to the legs, scrotum, penis, abdomen and back.

About 50 per cent showed a decided atrophy of the muscles, and the wrist and foot-drop.

ETIOLOGY

In my research I find that the profession is as yet divided and unsettled as to its cause. However, there is a preponderance of the latest reports advancing the theory that it is due to a micro-organism, the exact nature of which has not yet been demonstrated. Which ever theory it may be, there necessarily follow many contributing causes; among which may be mentioned, diet, the overcrowding of a large number in close or improperly ventilated quarters, dampness, improperly and unsanitarily kept sleeping quarters, many or even all, may be found absent.

Of the twenty-one cases, of which I report, coming under my observation, 85 per cent. of them are lovers of rice and meat. The question of overcrowding into close and unventilated quarters can scarcely be applied to the

*Read before the Lyon County Medical Society.

cases under discussion. Our prison cells are all thoroughly fumigated and renovated at regular intervals, and all cells have been provided with perfect working ventilating fans, furnishing an abundance of pure fresh air at all times.

All prisoners are required to keep their cells in a clean, sanitary condition.

As to location of cells, of the twenty-one cases, three were taken from the basement, six from cells on first walk above the basement, seven from cells on the second walk above the basement, and the remaining six from cells on the third walk above the basement. None of the cells above the basement could be damp.

SYMPTOMS

A small percentage had some prodromal symptoms, of thoracic oppression and constriction, headache, general weakness, and epigastric pains, which were shortly followed by muscular weakness in the lower limbs. A small percent of them had the weakness and swelling extending into the arms and neck. After running a course of some ten days, we have atrophy and hardening of the muscles, with the loss of patella reflex. The atrophy showing more in the extensors than in the flexors. In some of the cases there were marked wrist and ankle drop. Majority had a macular eruption on their lower limbs.

Subjectively, they complain of intense pain upon the slightest pressure along the muscles of the leg, generally following the course of the nerve trunks. I found a marked dropsical condition of the muscles below the knee, with a slight paralysis or loss of motion. In two of the cases, there seemed to be a general anasarca from the waist down, with effusion into the serous cavities, scrotum, and penis. Dyspnea, cardiac palpitation, tachycardia and high blood-pressure found in every case. The temperature running low or none at all. The examination of the urine in all the cases showed an excess of indican. One case developed a mental weakness and temporary insanity.

Of the twenty-one cases five of them were classed as of a virulent, or malignant type. All of his symptoms seemed to be of an aggravated form. One case proving fatal on the eighth day after admission to the hospital.

DIAGNOSIS

In making this diagnosis, I must admit, that I was a little slow in coming to a conclusion, but I was not long in determining that I had something to deal with out of the ordinary, and entirely unlike anything I had ever experienced in my practice up to this time. My four years of experience among prisoners has led me to ever be on the lookout for the professional malingerer, who may have learned various methods of self-medica-

tion and the application of irritants to bring about symptoms and conditions upon their body to deceive and get excused from performing their tasks. As to this I was not long left in doubt, and realized that I had something of a more serious nature to deal with, and that I must give it a more serious consideration.

After making a thorough research of the current medical literature at hand, I was then not long in drawing my conclusions, and making a positive diagnosis of beri-beri, or multiple neuritis, a subtropical disease.

PROGNOSIS

My prognosis has been favorable as to the larger percentage of my cases. The one case that terminated fatally, was, from its very incipieney, of a malignant character, continually growing worse day by day, complications arising, because of a weakened constitution, without the power of resistance.

The chief distinguishing features found in the cases were the tachycardia, low temperature, a temperature out of ratio with the pulse rate, excess of indican found in the urine, a wabbling, shuffling gait, loss of patella reflex, and a partial loss of sensation with numbness and ankle and wrist drop.

Out of the twenty cases there was but one that did not show more or less edema in the legs. This case of exception had no swelling in the legs, but a severe stomatitis and bleeding of the gums.

Constipation was an early factor in all, the urine was scanty and contained an excess of indican, but otherwise normal in its consistency, all of which would point to an auto-toxemia.

The systolic blood-pressure in some cases reached as high as 200. This high blood-pressure, I take to be due to the physical and chemical changes in the musculature, caused by a lack or deficiency of oxidation and the accumulation of products of metabolism. We generally find a high blood-pressure in gastro-intestinal disorders.

Another distinguishing feature that I have noticed in all of my patients, was a virulent bounding pulse in the neck.

In the study of cases presenting a condition of auto-toxemia, we sometimes fail to account for many of the toxins which are produced in the system, and which I have attributed the result of imperfectly digested food, food eaten in a hurry, and then remaining in the bowels over night. This is a point that should be remembered when we come to the treatment of the malady.

In my opinion, the dyspnea is due to a partial paralysis of the diaphragm. The irregular wabbling gait accompanied by the foot and wrist drop is due to the weakness of the joints. In one of my cases the weakness

was so great that it was with great exertion and difficulty that the patient was able to walk across the floor.

Muscular atrophy and a hardening soon follow the weakness, the surface tense and shining, with some contraction. The disease seems to first manifest itself in the nerves of the legs by a severe aching pain, persisting from day to day and becoming more intense and distressing. The motor symptoms appearing after the premonitory disorders. Mental weakness and temporary insanity is not uncommon, and as I have stated developed in one of my cases. After taking all symptoms collectively you will hardly make a mistake in your diagnosis, as they do not simulate that of any other known disease.

TREATMENT

Prophylaxis. As soon as I have my diagnosis firmly made, I at once isolate all patients showing symptoms of the disease.

I order them to be removed from their cells to the hospital. I place them in a reserved portion of the building, cut off from any communication with other parts or patients. Their meals to be taken separate, and the dishes used by them to be washed and kept for their own use throughout the disease. I order the bedding and clothing removed from their cells and destroyed, the cells well fumigated.

When they are discharged as cured they will be furnished with new bedding and clothing.

Believing the disease to be one in which auto-toxemia plays a large part, I have formulated my treatment along the line of elimination and support. I institute strict hygienic measures, allowing all of the fresh air possible into their sleeping apartments.

During the day, all that are able, are taken out on the yard for exercise regularly, and then conducted to a large building, that had formerly been used as a foundry. In this building they are permitted and encouraged in playing pool or other exercise to their choosing.

I allow them no meat or heavy diet (for their supper.) To stimulate the elimination by the kidneys and to supply a deficiency of acids in their system, I order a barrel of lemonade prepared and placed in the building, advising them to drink of it freely throughout the day. As a part of their diet, I prescribe baked apples, pickles and fruits.

Medicinally, to aid in the reducing of the edema, I give acetate of potash and digitalis. To relieve the constipation and eliminate by the bowel, I give compound jalap powder as a purgative, and strychnine to support the heart.

In the later stage, all who show a partial paralysis, in addition to the above line of

treatment, I give them electricity, faradic interrupted and continuous currents, daily. Some claim better results from the galvanic current, but this I have never used.

In the collection of data, clinical histories, and notes for this paper, I am very greatly indebted to Dr. J. C. McCreary, for his proficient and untiring assistance.

M. J., negro man, age 32, single, weight 165 has had a part of the diseases of childhood, but no other severe sickness; father and mother both living, occupation farm laborer. Ordinary diet but fond of rice and meat.

Admitted to the hospital April 28th, complaining of shortness of breath, pulse 112, temperature 101, tachycardia, blood-pressure, systole 120, diastole 50, edema of lower limbs, macular scaly eruption on limbs, furred tongue, constipation, kidney action scanty, examination of urine shows excess of indican, numbness of limbs, staggering gait, tenderness about the ankle joint.

May 15th marked improvement, still a great deal of edema and tenderness in limbs and wrist joints, reflex normal, May 19th pulse 96 other symptoms negative. May 22nd no edema and but slight tenderness about the joints, some dragging of the limbs in walking.

Allowed free exercise of the grounds with slow convalescence, returning to his work on May 28th.

The temperature throughout the disease ranged from 98 to 102.

G. P., white man, age 21, married, weight 145, has had a part of the diseases of childhood, pneumonia and typhoid fever, family history negative, occupation farm laborer. Admitted to the hospital on April 24th, pulse 120 full and bounding, temperature 98, a prodromal headache, tachycardia, blood-pressure, systolic 142, diastolic 40, edema of the abdomen and lower limbs, furred tongue, constipation, kidney action scanty, examination of urine shows excess of indican, specific gravity 1025, extreme tenderness of body and limbs, loss of motion and tendon reflex, gait irregular, confined to bed most of time.

May 12th pulse 104, neck swollen, excessive tenderness of abdomen and lower limbs, some delirium, ankle drop.

May 22nd muscles atrophied, and very tender to touch the entire course has been of a malignant type. The temperature ranging from 97 to 99.

A slow but continued recovery returning to work on May 28th.

L. M., negro man, age 39, married, weight 150 pounds, has had a part of the diseases of childhood, also LaGrippe, father died of dropsy, mother died of pneumonia, one sister died of septicemia, occupation farm laborer. Ordinary diet, but especially fond of rice.

Admitted to hospital April 6th, pulse 118, temperature 98 2-5, paroxysmal tachycardia,

blood-pressure, systole 182, diastole 56, edema of lower extremities, abdomen, back, scrotum and penis, atheromatous condition of the blood vessels, furred tongue, gingivitis, constipated, kidney action scanty, examination of urine shows excess of indican, ankle drop, tenderness and numbness of lower extremities, staggering gait.

May 12th, marked improvement, still some tenderness about the ankles, atrophy of the muscles, loss of tendon reflex.

May 22nd, pulse 106, complains of stiffness in ankles, a dragging gait, muscles of leg tense and hard. The temperature ranging from 97 to 99 1-5.

Allowed free daily exercise of the yard, slow convalescence, returning to work on June 18th.

M. J., negro man, age 50, married, weight 180, has had a part of the diseases of childhood, and la grippe, father and mother dead, cause unknown, occupation farm laborer. Admitted to the hospital April 13th, pulse 116, temperature 98 3-5, tachycardia, blood-pressure systolic 180, diastolic 50, edema and tenderness of the lower limbs, with a macular eruption, also edema of the abdomen, scrotum, penis and back. Furred tongue, red edges, constipated, kidney actions scanty, examination of urine showed excess of indican.

A general numbness and inability to walk, loss of reflexes, partial loss of motion of lower extremities, ankle drop, loss of tendon reflexes.

May 12th, some improvement, a wasting away of the muscles of lower limbs. On May 15th marked improvement in all symptoms, sense of constriction about the chest.

May 22nd marked improvement, no edema of lower limbs, some pain and tenderness on pressure, a stiffened, dragging gait, the temperature ranging from 96 3-5 to 99 2-5.

Permitted free daily exercise of the grounds with slow convalescence, and returned to work on June 16th.

J. W., negro man, age 39, married, weight 125, has had all of the diseases of childhood, also la grippe, pneumonia and typhoid fever, father died of paralysis, mother of tuberculosis, two brothers died of tuberculosis, a common laborer.

Was admitted to the hospital April 27th, with prodromal symptoms of general weakness, pulse 125, temperature 97 4-5, paroxysmal tachycardia, blood-pressure systolic 160, diastolic 70, edema of lower limbs, abdomen, scrotum and penis, furred tongue, constipated, kidney action scanty, examination of urine showed an excess of indican, muscles tender and contracted. On May 12th, slight edema of limbs, with a hardening of the muscles. On the 15th, some improvement shown in all the symptoms. May 22nd, stiffness of the ankle joints, tenderness of the

bowels, a seeming weighty and dragging of the lower limbs. The temperature ranged from 97 to 99 2-5.

Made an uneventful recovery returning to work on May 28th.

G. W., negro man, age 37, married, weight 140, has had a part of the diseases of childhood, no severe illness, can give no family history, occupation working in the mines, ordinary diet, very fond of rice. Admitted to the hospital May 6th, complained of difficult breathing, some edema of the chest, pulse 120, temperature 97 3-5, tachycardia, blood-pressure systolic 180, diastolic 50, extreme edema of lower limbs, rash over entire lower limbs, edema of scrotum and penis, furred tongue in center with red tip and edges, constipated, scanty kidney action, examination of urine showed excess of indican, loss of tendon reflex, sensitive to touch in lower limbs with loss of motion, swelling of neck and body.

May 12th, tenderness of the muscles of the legs also an atrophied condition shown. May 15th distinct atrophy of the muscles and tenderness, a dragging gait. May 17th, still tenderness of the muscles, a constriction around the chest, loss of tendon reflex. May 19th, improvement in the lower limbs, but tenderness over the bowels. May 19th excessive tachycardia, arterio-sclerosis, tenderness of the lumbar muscles, still a marked atrophy of the leg muscles with tenderness. May 22nd, some improvement in general condition, still has a marked shuffling gait.

Permitted free exercise daily over the grounds with a slow convalescence, returning to work on June 18th.

The temperature throughout the disease ranging from 97 to 99.

J. R., negro man, age 27, single, weight 210, had a part of the diseases of childhood, no severe illness, father and mother dead, cause unknown, one sister died of tuberculosis. Occupation, worked in a livery stable. Admitted to the hospital May 4th. Complained of pain in chest, hacking cough, temperature normal, pulse 126, tachycardia, blood pressure systole 155, diastole 45. Edema of the lower extremities, furred tongue, appetite not good, constipated, kidney actions scanty, examination of urine normal except excess of indican. Numb feeling and tenderness of lower extremities.

May 12th, improvement, but still tenderness of the lower limbs, apparently complete recovery, dismissed from the hospital on May 21st. Temperature during the course of the disease varied from 97 to 99.

N. G., negro man, age 24, married, weight 180, had a part of the diseases of childhood, no severe illness, occupation a common laborer, excessively fond of meat. Admitted to the hospital May 4th, complaining of weakness in lower limbs, pulse 120, temperature

99, blood-pressure systole 130, diastole 60, tachycardia, swelling and edema of the lower limbs and tenderness on pressure, furred tongue, constipated, kidney action scanty, examination of urine showed excess of indican. Slight tenderness of the muscles of lower limbs. May 12th, still some tenderness and swelling in the limbs; May 17th, no edema or tenderness in lower limbs, apparently a complete recovery, and was dismissed from the hospital on May 21st. The temperature in this case varied from 97 to 99.

J. P., negro man, age 35, single, weight 196, has had a part of the diseases of childhood. Has never had any serious sickness. Father dead, cause unknown, mother living; two sisters dead, and one brother, causes unknown. Occupation, ordinary farm laborer. Ordinary diet, fond of meat.

Admitted to the hospital May 5th, complaining of difficult and labored breathing, hacking cough, pulse 118, temperature 101, tachycardia; blood-pressure, systole 160, diastole 45. No edema of the lower extremities or tenderness. Furred tongue, stomatitis, and bleeding gums, constipation. Kidney actions scanty. Examination of urine showed normal except excess of indican.

May 15th, marked improvement, no edema or soreness of limbs, on May 17th, still no swelling in limbs but considerable tympanities and tenderness in the abdomen, some slight improvement. Normal reflexes. May 19th, condition of mouth improved. May 22nd, marked improvement of the mouth, other conditions negative. The temperature during the course of the disease varying from 97 to 102.

Permitted free exercise over the grounds making a slow convalescence, returning to work on June 18th.

D. S., negro man, age 23, single, weight 152; has never had any of the diseases of childhood. Has had malarial fever, and syphilis, has taken the Salvarsan treatment. Mother died from an operation, the nature of which was not known, father living. Occupation, a steamboat hand. Diet plain, but ate a great deal of meat.

Was admitted to the hospital May 5th; temperature 98, pulse 106, tachycardia, blood-pressure, systole 160, diastole 50; edema of the lower extremities with a tenderness of the muscles. Furred tongue, anorexia, constipated, scanty kidney action. Urine test normal except for an excess of indican. A slight tenderness over the bowels.

May 15th, greatly improved; no edema or tenderness, tendon reflex absent. May 19th, still soreness and tenderness of the bowels. On May 21st all conditions normal and the patient discharged. His temperature during the course of the disease varying from a subnormal of 97 to a maximum of 102.

T. M., negro man, age 44, single, weight 212, had most of the diseases of childhood. Has never had any severe illness. Father died at the age of 78, of senility; mother died of tuberculosis at the age of 48. Occupation ordinary day laborer. His diet plain, but ate a great deal of meat.

Was admitted to the hospital May 5th, temperature 98 4.5, pulse 112. Complained of shortness and difficult breathing; a hacking cough, tachycardia. Blood pressure, systole 180, diastole 49.

Edema of both lower extremities, scrotum and penis; tenderness of the abdomen. Furred tongue, appetite moderate, constipated, kidney action scanty. Muscles of the lower limbs tender and sensitive to pressure, gait sluggish and dragging. Complained of headache first few days.

May 12th, pulse improved but little change in the extremities or bowels, May 15th, marked improvement, but still tenderness and numbness of the lower limbs. May 17th, no tenderness or swelling of the limbs, some tendon reflex. May 19th, all conditions apparently normal, and was discharged from the hospital May 21st. During the course of the disease the temperature ranged from a subnormal of 97 to a maximum of 100.

T. S., negro man, age 20, single, weight 162, has had a part of the diseases of childhood, no other sickness, family history unknown, common laborer.

Admitted to the hospital May 2nd, respirations 44, and difficult; sonorous and sibilant rales over both lungs, hacking cough, pulse 124, temperature 97 4-5, tachycardia, blood-pressure, systole 175, diastole 90, edema of the abdomen and lower extremities, macular eruption over lower limbs, rough to touch, extreme weakness, furred tongue, constipation, kidney action scanty, examination of urine showed excess of indican, staggering gait, extreme tenderness over bowels and limbs, of a malignant type from the beginning, died on May 10th, 4:30 P. M.

R. H. L., white man, age 61, married, weight 120, has had a part of the diseases of childhood, has had pneumonia, typhoid fever, gonorrhea, and syphilis. Father and mother dead, cause unknown. Vegetable diet preferred.

Admitted to the hospital May 3rd, pulse 112, temperature 97, edema of the left lower extremity, with tenderness on pressure, irregular gait, tachycardia, blood-pressure systolic 160, diastolic 50, furred tongue, constipation, kidney action scanty, examination of the urine showed excess of indican.

May 10th, no improvement in lower limbs, slight edema of the scrotum and penis. May 15th, extreme weakness, a marked hardness of the muscles with pain on pressure, loss of tendon reflex.

May 19th, pulse 120, still edema and tenderness, atrophied condition of the leg muscle, and stiffness in the ankle joint. Complained of tenderness over the bowels. The temperature ranged from 97 to 99.

This is the only case in which I had edema in one limb and not in the other.

His work being that of a runner was not laborous and he was allowed to return to it on June 18th, but his convalescence has been slow and at this date, July 15th, still has some edema of the limb.

C. M., negro man, age 29, single, weight 199, has had a part of the diseases of childhood, has had pneumonia three different times, typhoid fever, could give no family history, farming and work in mine, admitted to the hospital May 2nd, complaining of shortness of breath, pulse 118, temperature 99, tachycardia, blood-pressure, systole 170, diastole 65, extreme edema of lower limbs, macular eruption, furred tongue, constipated, kidney action scanty, examination of urine showed an increase of indican, tenderness over bowels.

May 15th, marked improvement, practically no edema or tenderness of lower limbs, loss of tendon reflex. May 19th, no edema or tenderness of lower limbs, loss of tendon reflex. May 19th, no edema or tenderness, apparently complete recovery. Discharged from the hospital on May 21st. His temperature throughout the course ranged from 97 to 98 3-5.

R. F., negro man, age 26, married, weight 167, has had a part of the diseases of childhood, no other sickness, father died of angina pectoris, one sister died of pneumonia, occupation farm laborer, diet fond of meat and rice.

Admitted to the hospital May 3rd, prodromal stage of general weakness, pulse 100, temperature 98 3-5, tachycardia, blood-pressure, systole 120, diastole 60, edema of lower extremities, furred tongue, constipation, soreness throughout the bowels, kidney action scanty, examination of urine showed excess of indican, specific gravity 1025.

May 12th, pulse 112, tenderness of lower extremities, on May 17th, no swelling or tenderness of the limbs, slight tendon reflex. May 19th, pulse 120, other symptoms negative. Discharged completely recovered on May 21st. The apparent tachycardia on May 19th was due to a heavy purgative given the night before.

G. B., negro man, age 40, married, weight 160, has never had any of the diseases of childhood, or any other serious illness, has had gonorrhea and syphilis, family history negative, occupation farm laborer ordinary diet, but extra fond of meat and rice.

Admitted to the hospital May 3rd, complaining of difficult breathing, hacking cough;

pulse 120, temperature 99 2-5, tachycardia, blood-pressure, systolic 160, diastolic 50, edema of lower extremities, abdomen, back, scrotum and penis; furred tongue, constipation, kidney action scanty, examination of urine showed an excess of indican: Extreme tenderness over the bowels, has a regular shuffling gait, has been confined to bed most of the time, the case being of a malignant type.

May 15th, extreme weakness and numbness of lower limbs, with slight edema. Marked hardness of the muscles, on May 19th, pulse 120, marked improvement, slight edema and tenderness of the limbs, on the 22nd pulse 100, still improvement, an atrophy of the leg muscles, tender on pressure, stiffness in ankle joints, some tenderness yet in the bowels, a stiffened condition of the legs. Temperature ranged from 97 to 100 3-5.

Made an uneventful and complete recovery returning to work on May 21st.

A. N., negro man, age 36, single, weight 174, has had none of the diseases of childhood, or any other illness except syphilis, family history negative, occupation common laborer, ordinary diet, fond of rice and meat. Prodromal stage of general malaise.

Admitted to hospital April 17th, complaining of difficult breathing, sonorous rales over both lungs, hacking cough, had aortic regurgitation two years ago, pulse 126, temperature 98, tachycardia, blood-pressure, systolic 200, diastolic 55; edema of abdomen, back, scrotum, penis, and lower limbs, and in the cellular tissues of neck and face.

Furred tongue, constipation, kidney action scanty, examination of the urine shows excess of indican, extreme tenderness of lower extremities, staggering gait, confined to bed most of time.

May 12th, shortness of breath, accumulation of mucus in bronchial tubes, of tenacious character difficult to expectorate.

May 15th, no perceptible improvement in general condition, tympany of bowels and marked swelling of lower limbs. Has an aggravated cough and expectorates quantities of tenacious frothy mucus. Sibilant and sonorous rales heard over both lungs. A good deal of dyspnea. Confined to bed all the time and complained of pains radiating through the head and back.

May 17th, still some distension of bowels, very little edema in the extremities, less tenderness of muscles, complains of a constriction around the chest.

May 22nd, pulse 125, no edema of lower extremities but still sensitive to touch over the bowels; extreme soreness of the feet, walks with difficulty. The case has been of a malignant type throughout.

Temperature ranged from 97 3-5 to 100.

Under a slow but continued convalescence, with daily exercise over the yard made a com-

plete recovery and returned to work on June 18th.

E. T., negro man, age 34, married, weight 187, had some of the diseases of childhood, had an attack of heat exhaustion, pneumonia and typhoid fever, laborer on farm. A prodromal stage of headache and general weakness. Admitted to the hospital April 26th, pulse 108, temperature 99 3-5, tachycardia, blood-pressure systolic 200, diastolic 50, edema of lower extremities with a macular rash, also edema of the abdomen, back, scrotum and penis, all parts tender to touch; furred tongue, constipated, kidney action scanty, urine examination showed excess of indican, numbness of lower limbs, slight contraction of the extensor muscles, all symptoms bordering on a malignant type.

May 12, complained of shortness of breath, other symptoms continuing. On May 15th, some slight improvement shown, loss of tendon reflex. May 22nd, continued improvement, no edema of lower extremities but a hardened condition of the muscles, stiffness in ankles, tenderness of bowels, a shuffling gait with a sense of weight in the extremities. Temperature ranging from 97 2-5 to 99 4-5.

Owing to continued weakness excused him from contract work and placed him on the yard, July 5th.

W. C., negro man, age 28, married, weight 190, has had a part of the diseases of childhood, has had la grippe, and pneumonia, father living, mother died of cancer of the liver, occupation a farm laborer. Ordinary diet, but very fond of rice. Admitted to the hospital on April 26th, complaining of shortness of breath, sonorous rales, pulse 108, temperature 102, tachycardia, blood-pressure systole 125, diastole 60, edema of lower extremities, also the arms, a macular rash over legs and arms, furred tongue, slight stomatitis, constipated, kidney action scanty, examination of urine showed excess of indican, ankle drop, partial loss of motion of lower limbs, staggering gait.

May 12th, a hardening condition of the muscles of lower limbs, had an attack of nausea, wrenching and vomiting, bowels tympanitic, this was, however, following the administration of a course of calomel to which it possibly was due. May 15th, a tenderness of the bowels, and complained of pain through the back, neck and head, enlargement of the cervical glands, loss of reflex.

On May 19th, no edema of the extremities, but still tenderness of the bowels and muscles of the limbs. May 22nd, no edema, tenderness improved, some swelling of the cervical and parotid glands. Extreme weakness in lower limbs, hardly able to move. Temperature ranging from 97 3-5 to 103.

Returned to work on June 11th, but strength not fully returned.

L. H., negro man, age 40, married, weight 135, has never had any of the diseases of childhood, has had syphilis, father died of pneumonia, mother died of pneumonia, sister died of ptomain poisoning, occupation cook, ordinary diet, but is fond of rice and meat.

Admitted to the hospital April 6th, complaining of shortness of breath, pulse 114, temperature 100, tachycardia, blood-pressure systolic 145, diastolic 50, edema of abdomen and the lower extremities, macular rash over the limbs, furred tongue, stomatitis, kidney action scanty, examination of urine showed excess of indican, extreme tenderness and numbness of the lower limbs, with partial loss of motion, extreme weakness, mental weakness with temporary insanity, specific gravity of urine 1030.

May 12th, a hardening and contraction of the muscles of lower limbs, loss of tendon reflex May 17th, atrophy of the muscles of right leg, slight edema of left. Tenderness of bowels.

May 19th, pulse 108, no edema, but some tenderness on pressure; May 22nd, pulse 100, some improvement, dragging gait. Temperature ranged from 97 2-5 to 100 4-5.

June 11th, returned to work, but strength returning slowly.

B. W. W., white man, age 43, weight 235, has had all the diseases of childhood, la grippe, two attacks of pneumonia, and gonorrhea, family history negative, occupation tobacco salesman.

Admitted to the hospital April 26th, pulse 102, temperature 97, tachycardia, blood-pressure, systolic 160, diastolic 49; extreme edema of both upper and lower extremities, and abdomen, furred tongue, constipation, kidney action scanty, examination of urine showed an excess of indican, specific gravity 1010, good deal of tenderness and extreme numbness, shuffling gait, confined to bed much of the time.

Pulse 88, on the 12th, improvement of the edema, on May 15th, marked improvement of all symptoms, but still complained of pain in knee and ankle joints, with a stiffness of the muscles, loss of tendon reflex.

May 22nd, pulse 112, no edema of the extremities but a good deal of tenderness on pressure, great weakness, some tenderness of the bowels, dragging gait. Temperature ranged from 96 3-5 to 99.

Permitted free exercise of the yards daily making a slow recovery, sent to work on June 21st, but later was forced to place him on the yard owing to the increasing of the edema in the legs and arms when on his regular work. At the present date, July 16th, his limbs and hand are edematous and sore.

FIBROID TUMORS.*

By A. W. CAIN, Somerset.

The frequency with which these tumors occur, their importance both to the general practitioner and consultant should lead us to give them very careful study, there is probably no other condition which produces such a regular routine of symptoms and which by the careful study of our cases we are able to arrive at such an accurate diagnosis. They are more frequently found in single and sterile women, than in those who have borne children, they occur more frequently in colored than in white women, they are described as intramural, subserous, submucous and intraligamentous. I shall not describe these separately as the forms are well known to all members of this society. Fibroids may be single or multiple, exist in groups or scattered over the uterus, they may attain almost any size, they are benign, but may be associated with malignant disease, the submucous variety frequently pushes further and further within the uterine cavity developing a pedicle of almost any length and thickness, it usually starts above the cervix but frequently is found with the pedicle attached to the cervix, these are known as polypus. The most prominent symptoms of fibroid is hemorrhage, although you may have a very large tumor, particularly if it is of the subserous type without any hemorrhage at all.

Fibroids do not, as a rule, begin to produce menorrhagia unless of the submucous variety under thirty-five years of age, fibroids disturb menstruation in a systemic and regular way, and there are a great many diagnosticians who fail to get this thoroughly in their minds, get mixed in their diagnosis with miscarriages, malignant tumors, etc., when they should not. First is noticed an increase in the amount of the flow at each period, second an increase in the duration, and third a prolongation of the menopause. A woman with fibroids may menstruate every three weeks, even every two weeks, and the periods may be so prolonged, that one period will extend to the commencement of the next, but there is one thing they do not do, and that is produce intermenstrual flow, and when they reach the menopause and stop the flow, they do not commence again, while with miscarriage and malignancy, endometritis, etc., there is no such regularity of symptoms, while fibroid tumors are undoubtedly benign, when they occur in women during the child-bearing period, if they are producing symptoms either by hemorrhage or pressure, they should be removed, if they are of such a type that they are producing no symptoms and particu-

larly if the woman is nearing the menopause, they may be allowed to remain under observation.

We will now report some cases hoping that in the discussion of same that the subject of fibroids will be thoroughly discussed.

Case I. Mrs. G., white, age 38 years, the mother of six children, always flowed rather profusely at her menstrual periods, after the birth of her second child; otherwise she was in normal health, except the physician who waited on her during her last three confinements, stated that there was always two afterbirths, and that she always came very near bleeding to death, he spoke to me regarding her case before her last confinement, and made arrangements to have me called at the



same time, to assist him in her confinement as I had about six miles further to go than he did, when I reached her home the child and what was considered two afterbirths had been delivered. the woman was very pale, pulse rapid and showed all signs of having lost a great deal of blood, after securing firm uterine contractions and starting a saline solution by the drop method, the patient was soon in a fairly good condition, on examining the two supposed placentas, one with a pedicle about the size of the umbilical cord which had evidently been separated in this case as in the two previous ones by uterine contractions. I

*Read before the Pulaski County Medical Society.

mention this case on account of the rarity of such cases.

Case II. Mrs. C., white, age 34 years, mother of five children, all of her labors had been normal. After the birth of her last child when menstruation was again established, she noticed the periods were closer together, and their duration prolonged, so much so after a few months she was hardly over one period till another began, in about two years she again became pregnant, but continued to have a bloody discharge throughout the pregnancy, the physician in attendance thought she was threatened with a miscarriage, and she spent most of this pregnancy in bed, a living child was delivered at the seventh month, at which time she lost a great deal of blood, after the child was delivered it was then noticed as she expressed it, that her abdomen was about as large as ever, at this time I saw her and made a diagnosis of a subperitoneal fibroid, when the child was six months old she was brought to the hospital and operated on, a hysterectomy being done, the tumor was connected with such a broad pedicle that the tumor could not be removed from the uterus, but in this case the tumor seemed adhered to everything and it was impossible to separate the adhesions, so the tumor was removed from the capsule and as the patient was weak and the hemorrhage controlled with great difficulty, the capsule was packed with gauze and the wound practically left open, some sutures were introduced at the lower part of the incision, and other sutures introduced so the wound could be brought together as the amount of packing was lessened. The gauze first introduced was allowed to remain 72 hours, when it was removed without much hemorrhage, the patient made a slow but perfect recovery, and is now in good health.

Case III. Mrs. C., white, age 28 years, the mother of two children, the youngest of which is 8 years of age, came to my office in January, 1915; she was very pale, pulse rapid, and had fainted several times, she stated that she was unwell every three weeks, and menstruated never less than ten days, sometimes longer, she also stated that there was such an odor that she could hardly bear it herself. On examination the cervix was somewhat dilated and the examining finger came in contact with a body which appeared about the size of a foetal head, at the fourth month the patient was anesthetized, the cervix dilated, the mass taken hold of by a heavy sponge holder and twisted off, it proved to be an intrauterine sloughing fibroid, the site of the removal was thoroughly curetted and touched with iodine, the patient remained in bed a week and has had no more trouble, we have had four other cases similar to this one in the last two years, all treated in the same way, except in some

cases we have had to use scissors to assist in the removal, we have never had any alarming hemorrhage, in one case the tumor was so large and the pedicle so broad that we had to divide the tumor into four parts, removing one part at a time.

Case IV. Mrs. J., King's Mountain, referred by Dr. Thompson, this patient was 36 years old, the mother of six children, the youngest six years of age, she suffered no pain and had no continuous flow, but had become very weak and anemic on account of increased amount and frequency of the flow, in addition to this, there was a very bad discharge, on examination the uterus was enlarged, the cervix dilated and a tumor mass was partly protruding through the cervix and adhered to it, the patient stated that she had been curetted several times with no benefit, she felt sure on account of the awfully bad odor, that she had a cancer, and insisted that she preferred to undergo a major operation if it promised a permanent cure. Not feeling sure ourselves but what there was malignancy, we did a pan-hysterectomy, the patient made a slow recovery on account of anemia, but is now a strong woman. On examining the specimen the uterine walls were thickened, the pedicle was very broad, and if it had been possible to remove the uterus through the cervix, great traumatism would have been done, and the danger of infection great.

Case V. Mrs. L., white, age 34 years of age, married, was never pregnant. Began to menstruate at 14 years, suffered no more than the ordinary pain with menstruation, she stated that for the last ten years her periods had been coming closer together, and that there was an increased amount of blood with clots.

On examination, a diagnosis of an extra-mural fibroid was made, an operation was recommended. A hysterectomy was done, the uterus which was perfectly symmetrical in shape and weighed six pounds, was removed. There was hardly any space for the uterine cavity at all, this was now two years ago, the woman is in good health.

Case VI. Mrs. J., referred to me by Drs. Flanigan & Rowe, Jamestown. Colored woman age 62 years, the mother of six children, had never ceased to menstruate, but on the contrary for the last several years, the flow had occurred at more frequent intervals, and the amount at each period increased, this patient was very weak when brought to the hospital, a distance of 35 miles on a cot in a wagon, she was extremely thin and anemic, the form of the tumor could be plainly seen through the abdominal walls, the diagnosis of intra-mural fibroid was easily made out. A hysterectomy was done in the usual way and the uterus with the tumor removed, the mass

weighing 8 pounds, the patient lost but very little blood, all adhesions were tied before they were cut, however, on account of the extreme weakness of the patient, a saline solution by the Murphy drop was administered, and seemed to do good, this patient remained in the hospital three weeks making a good recovery.

Case VII. Mrs. M., age 26, referred by Drs. Ratliffe & Farmer. In fact I was called to see her with them, she had been married two years, but had never been pregnant, she had, so she said, always menstruated regularly every three weeks, duration five days, quantity about normal, four months ago she ceased to menstruate, and suffered from nausea, she called her family physician, when she began suffering pain and having hemorrhage and thought she was going to have a miscarriage, in fact it appeared that this was the case, on examination the first thing to attract attention was that her abdomen was as large as a woman at full term, her abdominal walls thin, and on by-manual examination, the mass appeared too hard for a pregnancy, and the cervix was dilated to about the size of a dollar, the examining finger came in contact with a soft mass, we made a diagnosis of a pregnancy in a uterus containing a fibroid, and advised a hysterectomy, which was finally agreed to, and removed a mass weighing 7 1-2 pounds, but on examining the specimen there was no pregnancy at all, nothing but a uterine fibroid, a woman with such thin walls, failing to recognize a tumor of this size, shows how little attention these people pay to themselves, this patient did fine until the seventh day, when she developed a pneumonia and came very near losing her life; she was hauled to the hospital over a road as rough as you can imagine during the cold muddy weather last spring, and appeared to be a very delicate woman, it has now been only five months since the operation, and she is in better health than she had been for some years.

Case 7 1-2. Mrs. L., Referred by Dr. Warren, white, age 36, the mother of three children, the youngest of which was eight years old; she was a very delicate woman, only weighing 85 pounds, for the last four years her menstrual flow had become more frequent and the quantity had gradually increased, till she was menstruating most all the time, pressure symptoms both of kidneys and rectum had increased to such an extent accompanied as they were with an almost continual menstrual flow, that she declared life was not worth living unless she could get some relief. She came to the hospital in September, 1914. On account of the thin abdominal walls, the uterus could readily be made out and the diagnosis of an intramural fibroid made, the uterus was removed by a supra-vaginal hysterectomy in the usual way. The mass weigh-

ed five pounds. The recovery was uninterrupted.

Case VIII. Mrs. P., referred by Drs. Weddle and Hughs; age 36 years, white, mother of six children, the last two being twins, four years ago, after the birth of these twins, she noticed that her menstrual periods came closer together, lasted longer, and that the quantity was increased, she also noticed a profuse leucorrhoea; about one year ago she began to notice that her abdomen was enlarging, in fact she appeared to grow stronger in every way, so much so that her friends all thought she was pregnant, and while at first she did not think this was so, she finally began to think this was true, though she continued to menstruate. About five months ago, thinking she was pregnant she ceased using some preventive which she was using against pregnancy, at this time the menses stopped, she began suffering from nausea, the abdomen made very rapid growth, and pregnancy was then thought certain, while she still was able to look after her household duties, she began to feel very uneasy, and she and her husband became convinced that she was not only pregnant, "but that something was wrong." On May 30th she failed to pass her urine, and Drs Weddle and Hughs were called, and relieved her by the use of a catheter, they were both called at this time as her husband expressed it, to make an examination and find out "what was wrong." On examination they found the abdomen larger than would be expected at a normal pregnancy, they could not reach the cervix at all, but could feel the fundus of the uterus, pushed backward against the rectum, and seemed to be fastened there, they also found the abdomen was irregular, appearing to be separated by a line, and attached to one of the masses, was a smaller mass which proved to be a smaller fibroid attached to the larger one. On operation it was found that the cervix was up behind the pubic arch, the fundus of the uterus being pulled back by the tumor. She was brought to the Somerset General Hospital June 3, and the diagnosis made by Drs. Hughs & Weddle confirmed by Drs. Norfleet, Parker and myself, and an operation was recommended and performed on June 5. Dr. Bolin administered the anesthetic, Drs. Parker and Norfleet assisted, a median incision was made from the umbilicus almost to the pubic arch, abdominal walls were very thin; on opening the abdomen the mass was adherent mostly posteriorly, and we soon found that we would make better progress working from behind forward, after separating some adhesions, we were able to pull the tumor forward from behind and deliver it, after getting the hemorrhage controlled, which we did not succeed in doing perfectly well, we clamped the broad

ligaments with strong clamps on eachside. When this was done, a supra-vaginal hysterectomy was done in the usual way, completing the operation. Just as the tumor was removed, it was noticed that the patient was doing badly, but on making pressure on each side of the abdominal wall now above the uterus, breathing again became normal, and the operation was completed in 45 minutes, the entire mass weighed 15 pounds.

I enclose photograph of specimen, mark No. 1, uterus containing a five months' pregnancy; No. 2, largest fibroid, considerably larger than pregnant uterus; No. 3, smaller fibroid attached with a common pedicle to uterus; this patient never suffered any shock to speak of, temperature was never as high as 100, never required an opiate to relieve pain; in two weeks she was sitting up, and in three weeks could walk all over the house and assist herself in most any way that she desired.

These cases have been operated on in the Somerset General Hospital, Dr. Bolin administered the anesthetic, Dr. Parker has assisted me. The cases have been referred mostly by the physicians of this county. The method where a hysterectomy is done, has been largely an abdominal supravaginal one, a pan-hysterectomy was only done in two cases, while hysterectomy is an operation that requires care and when it is being done for fibroids, may prove to be one of the most bloody and difficult operations of surgery, yet I think the dangers of the operation are exaggerated and many surgeons who are well able to do the operation successfully, are afraid to attempt it, one of the great dangers is secondary hemorrhage, particularly when catgut is used, for mass ligatures, it becomes soft and slippery, and is liable to slip when a large mass is tied, there is no danger of hemorrhage from the uterine and ovarian arteries, they are not larger than the radial arteries, I always like to see them bleed, then I can catch them up and tie them one by one, even if I use a mass ligature, I always take up the stump, catch up the arteries which can usually be easily seen and ligate them separately. If you use mass ligatures, in my opinion, it is best to use silk or linen, but you will use fewer mass ligatures and catch up smaller masses, as you operate on more cases, the danger of wounding an empty bladder is not great; begin high enough upon your uterus, so there can be no danger, stay so close to it even pushing the anterior covering of the lower part of the uterus forward with the bladder, that it is impossible to do the bladder injury, the same precaution may be taken with the rectum as with the bladder, the main thing is to have good light, confidence in yourself, and do your work carefully, and you will have fair success. I am sure there are enough physicians in each county in this Councilor District

who, if three or four of them will get together and do team work, that is, get accustomed to working together, can have just as good success as we have had in these cases. I shall be glad for this paper to be discussed by each member present, as many of you are personally acquainted with some of these cases, and some of you, with all of them.

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NEXT MEETING STATE ASSOCIATION,
LOUISVILLE, SEELBACH HOTEL, NOV. 6, 7, 8, 9, 1917

COUNTY SOCIETY REPORTS

Barren—The Barren County Medical Society met in regular session in Glasgow, August 15th, 1917.

Members present, Miller, Botts, Palmore, Taylor, Smock, Howard, Porter and Jordan.

The society was called to order at 1 o'clock p. m., by President T. F. Miller.

The reading of the minutes of the last meeting was deferred to next meeting.

Several interesting clinical cases were reported and discussed at some length by several members.

C. C. Howard gave an able talk on "Some of the Common Fractures, and Method of Diagnosis and Treatment." The talk was highly appreciated as an eloquent and up-to-date address.

There being no further business, the society adjourned to meet September, 19th, 1917.

J. M. TAYLOR, Secretary.

Franklin—The Franklin County Medical Society met in social session with Drs. Montfort & Coblin as hosts on September 11th, 1917, at 7:30 p. m., in Frankfort.

Present: Drs. Williams, Montfort, Demaree, Garrett, Patterson, Coleman, Mastin, Coblin, Minish, Wilson, nurses Allen and Farmer. In the absence of both president and vice president, Dr. Mastin was named as president pro-tem.

Minutes of the previous meeting were read, amended and adopted, routine business was then disposed of.

The scale of fees governing the practice of medicine in the city of Frankfort and Thorn Hill and the county of Franklin as far as applicable was then adopted, which was ordered printed on an illuminated card for office display.

This completed the business. A luncheon was then served by Mrs. Montfort and Mrs. Coblin, most elegant and appreciatively enjoyed. A vote of thanks was tendered the ladies and adopted by a standing vote.

U. V. Williams began the round table discussion of "The Importance of Early Diagnosis in Nephritis." A very profitable discussion of the subject by the entire membership followed.

The Kentucky Midland Medical Society will meet in Frankfort on October 11, 1917, at 11 a. m. Drs. Patterson, Montfort and Garrett were appointed a committee to arrange for the entertainment of the society.

Adjourned to meet October 9th, at 7:30 p. m., with Dr. Wilson as host.

U. V. WILLIAMS, Secretary.

Warren—The Warren County Medical Society met in the City Hall, September 12th, with a large attendance. The subject of Prostatectomy was discussed.

W. P. DRAKE, Secretary.

NEWS ITEMS AND COMMENTS

LEDERLE'S POLLEN "VACCINE" NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry.

Under the designation "Pollen Vaccine" the Lederle Antitoxin Laboratories sell a pollen protein extract "For Prophylaxis and Treatment of Hay Fever." The product is said to be made from a mixture of "equal parts by weight of the pollens of timothy, reedtop, June grass, orchard grass, sorrel dock, daisy, maize, ragweed and goldenrod."

To avoid confusion and in the interest of rational nomenclature, the Council has decided that henceforward in New and Nonofficial Remedies the term "vaccine" shall be restricted to products which contain living or dead microorganisms. Under this provision the Council does not accept a preparation in the name of which the term "vaccine" is incorrectly used.

Lederle's Pollen "Vaccine" is a solution of plant proteins and its designation as a "vaccine" makes it inadmissible to New and Nonofficial Remedies.

In consideration of the essentially experimental status of the use of pollen preparations for the prevention and treatment of "hay-fever," such products should be as simple as possible. The Council therefore has decided that, in accordance with the principle of Rule 10, pollen protein preparations, prepared from the pollen of two or more different species of plants, shall be accepted only if there is evidence that the given combination is rational. While there is some evidence to indicate that a person may be sensitive to the pollen of different species of grasses ripening simultaneously or to both ragweed and goldenrod, sensitiveness to both general groups is rare. The Lederle preparation is claimed to contain the pollen of seven different plants, cross sensitiveness to which has not been established, and in this respect the preparation is held to be irrational.

The preceding objections were sent to the Lederle Antitoxin Laboratories. They were urged to modify the name and composition of their product to meet these requirements. The firm replied that it was not prepared to make the suggested changes; accordingly the Council voted that Lederle's Pollen "Vaccine" be not admitted to New and Nonofficial Remedies.

Dr. F. A. Taylor, of Somerset, who has been seriously ill, is improving nicely.

Dr. Nona Ellis, who for the past two years has been a practicing physician located at Boydsville, has successfully passed the army medical board examination and received his commission. He will leave in a few days for army service.

The Christian County Medical Society held its regular monthly meeting at the public library. There was a good attendance of the physicians and the following papers were read and discussed: "Meningitis," by Dr. H. W. Watts. "Pterygium," by Dr. Rozell.

Dr. Lawrence Newton Todd, a physician practicing at Berry, having volunteered his services to the Government some time ago, has been issued a commission in the Officers' Medical Reserve Corps as First Lieutenant.

Dr. C. R. Rice, one of Augusta's successful physicians, has received his commission as First Lieutenant in the Medical section and expects to be called at any time. Dr. Rice enlisted for service in France and will likely be stationed on the battle fields.

Dr. J. R. Best, who for several years was assistant jail physician at Louisville, and who has been practicing medicine at Coyle, Oklahoma, is at The Seelbach, paying a visit to his friends before being called into the Government service. Dr. Best was recently appointed to the Medical Officers' Reserve and expects to be sent to France in the near future.

Dr. W. R. Thompson of Mt. Sterling, has left for a three weeks' vacation in the North. Dr. Thompson's health has not been good during the summer and his many friends hope that the change of climate, rest and quiet of his vacation will completely restore him to robust health.

The John Graves Ford Memorial Hospital at Georgetown was opened August 30th. It is one of the most up-to-date hospitals in the State and is a gift of Mrs. John B. Graves in memory of her grandson.

Dr. John Puryear, a prominent Mayfield physician who volunteered for the medical reserve corps, will leave in a few days to begin training at Fort Benjamin Harrison, Indiana. He received orders to report to the commandant of the medical officers training camp. Dr. Puryear's family will join him later.

Dr. John Dismukes, of Mayfield, says that the person who picked up his office drugget from his vacant lot at Eight and North streets, where it was being cleaned, will please return it. He says the person doubtless thought he was picking up old rags, but he would like to have it returned just the same.

The three highest officials of the Kentucky State Medical Association have been appointed to responsible positions in the United States medical service.

The officer who will have the rank of Major, are P. H. Stewart, president-elect; Dr. Milton Board,

president, and Dr. A. T. McCormack, secretary. Dr. Stewart and Dr. Board will be stationed at Camp Taylor. Dr. McCormack has been ordered to report to the Rockefeller Institute for duty.

Dr. Stewart, whose home is in Paducah, assumes his duties as chief operating surgeon at Camp Taylor. He will have a large staff under him.

Dr. Milton Board of Louisville, will also report for duty at Camp Taylor. He will head the unit on mental and nervous diseases.

The personnel of the unit will consist of Dr. Board, a neurologist, with the rank of Major; Lieut. Dr. Earl Moorman, a former Kentuckian, connected with the Indiana State Central Hospital at Indianapolis; one stenographer, ten male attendants and two graduate female nurses.

Dr. A. T. McCormack, of Bowling Green, will go to the Rockefeller Institute in connection with a course of treatment of wounds and various injuries of warfare. For some time he has been chief of the Examining Board of Army Surgeons in this State.

Dr. Morgan Vance, Jr., of Louisville, who was with the first United States Medical Corps sent to France, has been wounded. The news was received by his mother. It came in a cablegram from the British government, saying that Dr. Vance had been wounded and was now in a hospital in London. There was nothing in the cable to indicate the seriousness of the wound, nor how he met with the casualty.

Dr. Vance is First Lieutenant in the first Medical Corps that was sent over by the United States Government. He went first to London and then to the front, where he has been with the British Ambulance Hospital Unit.

Dr. Vance has two brothers who are in the service of the United States Army: Capt. Preston Vance, who recently went to Kansas to assist in mustering the Kansas National Guard, and Houston Grant, who is a member of a regiment in New York.

Dr. H. G. Reynolds who has been in Northern Michigan recuperating from the effects of blood poisoning, has returned home fully recovered.

Dr. Frank H. Bassett is a candidate for Mayor of the City of Hopkinsville, under the commission form of government, subject to the action of the special primary election to be held Saturday, October 20.

AMERICAN WOMEN'S HOSPITALS.

The War Service Committee of the Medical Women's National Association has organized the American Women's Hospitals for work at home and abroad. The Surgeon-General of the Army and the General-Director of the Department of Military Relief of the American

Red Cross have approved the provision made for service to the army and to the civil population. The work will be officially part of the medical and surgical service of the American Red Cross.

The scope of the plan is a broad one. It includes units for maternity service and village practice in the devastated parts of the Allies countries and hospitals run by women for service there as well as for the United States army in Europe. In this country acute and convalescent cases will be treated in hospitals equipped for the purpose; soldiers dependents will be cared for, interned alien enemies will be given medical aid and substitutes will be provided to look after the hospital service and the private practice of physicians who have gone to the front.

The first units hope to go to France and to Serbia in the early fall.

Headquarters have been established at 637 Madison Ave., New York City. Dr. Rosalie Slaughter Morton is Chairman of the War Service Committee.

Blood Plasma Bicarbonate.—Reasons are discussed by Van Slyke and Cullen for basing both the definition of acidosis and the methods for its detection on the blood bicarbonate. Experiments are detailed showing both in vivo and in vitro the influence on the plasma bicarbonate of various factors, in particular of the shift of bases and acids between plasma and corpuscles under the influence of changing carbonic acid concentration. A simple technic has been developed by means of which the capacity of the plasma to combine with carbonic acid under definite tension is determined as a measure of the alkali in excess of acids other than carbonic. The plasma, from oxalated blood, drawn and centrifuged under definite conditions, is shaken at room temperature in a separatory funnel filled with alveolar air from the lungs of the operator, or with an artificial air mixture containing 5.5 per cent. of carbon dioxide. The carbon dioxide content of the plasma is then determined by the method described in the next paper. The results are calculated in terms of bicarbonate and are tabulated. The value determined appears to indicate not only the alkaline reserve of the blood, but also that of the entire body.

Peptone Hypoglycemia.—Dogs, not uniformly controlled as to diet, general condition, or time after eating, were injected intravenously with 0.3 to 0.5 gm. of Witte's peptone per kilogram of body weight. The blood sugar was determined before the injection and at intervals of two and four hours after injection. In every case hypoglycemia developed. The average fall for thirteen dogs was 0.03 per cent. glucose or 34 to 35 per cent. of their original blood sugar.



DOCTOR EPHRAIM McDOWELL
1771--1830

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Some of the Medical Pioneers of Kentucky

EDITED BY

J. N. McCORMACK, M.D., L.L.D.

Illustrated With Portraits



"By the historical method alone can many problems in medicine be approached profitably. For example, the student who dates his knowledge of tuberculosis from Koch may have a very correct, but he has a very incomplete, appreciation of the subject."—OSLER.

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To
The Members of the Medical Profession of Kentucky
who,
however humbly, if worthily,
are attempting
to follow in the footsteps of these pioneers,
this little volume
is affectionately dedicated by their friend,
The Editor.

General Introduction

THE remarkable achievements of the pioneer medical men of Kentucky read so like a romance, and have been handed down as such an abiding and fruitful source of inspiration to their students and successors that, ever since the writer entered the profession, nearly half a century ago, it has been the constant wish and hope of all of us, expressed by frequent resolutions of the State Society and similar organizations, that to some especially qualified member of the faculty be delegated the important and pleasant duty of writing "The History of Medicine in Kentucky." Dr. David W. Yandell, doubly fitted for the task on account of his recognized ability as a writer, and by the fortuitous circumstance that he and his honored father represented in their own persons direct connecting links between the pioneers and the older members of the present day profession, often half promised to undertake the work, but death called him before it was begun. Then for years, Dr. Lewis S. McMurtry, because of his facile and puissant pen, his familiarity with the literature of the subject, and his knowledge of the personnel of nearly all except the first generation of our forbears, became the unanimous choice of his colleagues for this service, but the exactions of a large surgical practice and his teaching work and other duties made such demands upon his time as to make him unwilling to accept the assignment.

The failure of these efforts, and the knowledge that many of the only too scant case reports and other writings of this period of our medical history, some more or less crude and fragmentary, but often of great value, were published in journals long out of print, some gone hopelessly and many of them difficult to trace or obtain, and that much valuable unwritten information would be forever lost with the passing away of men already of advanced age, induced the writer to undertake, not the preparation of a medical history, but, recognizing that history, after all, is little more than a succession and tactful combination of selected biographies, the far more modest task of collecting and preserving in a somewhat permanent form such still available data of that time as might in abler and more fitting hands, be useful as the foundation of such a history of that day as would be worthy of the actors whose momentous deeds it recorded.

On account of the very nature of the work, as well as of the unavoidable delay in taking it up, while possibly other scarcely less important facts might have been accessible, which would have included other worthy men in its scope, and also to the limits of the space which can be devoted to even such a subject as this in an issue of the JOURNAL, the compilation is recognized as so incomplete as compared with what it should be, that the writer earnestly expresses the hope that some one of his more gifted colleagues may be stimulated not only to add biographies of

others of this early period rightfully entitled to honored places therein, but that the scope of it may be so extended as to include those of the later generations who actively and worthily spent and ended their days in Kentucky, often under-estimated it is feared, because of our intimate and short range association with them and also scores of native born or adopted sons of the Commonwealth who were educated or first won their spurs here, and then added luster and renown to our profession and to the State in distant fields of labor. Many familiar and honored names and faces in both of these classes, who well earned such a distinction, and who would reflect honor upon the profession by being included in such a future volume, will readily occur to all of the older members.

This is not the time or place, even if one were competent for the task, to weigh the individual merits of these pioneers, much less the comparative merits of the constructive life-work of master minds like McDowell, Dudley and Bradford in surgery and Drake, the senior Yandell and others in medicine and public affairs, in contrast with those of almost equal reputations who were followers rather than leaders, and some of whose reputations are based mainly upon one or more brilliant and successful operation or exploit, but in considering their accomplishments singly or as a whole a proper perspective upon the part of the reader is of the utmost importance.

The environments by which they were surrounded, including the lack of hospitals, trained nurses, anesthetics, modern surgical appliances, knowledge of asepsis and the other inherent and almost inconceivable difficulties under which their work was done, explains the incredulity of their contemporaries, and make their achievements seem almost miraculous. For it must be remembered that the subjects of all of the biographies, and most of the authors of these biographies and other papers, were not only the more or less self-educated products of country villages or districts, but were country practitioners when they performed the operations or made the scientific discoveries or advances which gave their names enduring places in medical history and in the annals of the State and Nation: and the most illustrious of them remained in the localities where they had won renown to the end of their days, and now lie in honored graves in the little communities which were still more highly honored by their lives and achievements.

In order to emphasize these surroundings and difficulties, and the claims of these forbears of ours to eternal renown, it should be borne in mind that Bardstown, although situated in a rich agricultural section, the seat of the Diocese or See of the Catholic church for all the country west of the Alleghanies, with the most illustrious courts and bar in the west, and recognized as a centre of learning and culture, had but 820 inhabitants when Brashear performed the first successful hip-joint amputation ever done in the world in 1806. Danville, the first Capitol of Kentucky, with the home of McDowell almost under the shadow of the State Buildings when he was doing his early surgery, had only 432 inhabitants when he operated upon Mrs. Crawford in 1809, and but 804 at

the time of his death. Mayslick, in Mason County, where Drake was reared and first practiced, had 130 inhabitants then and but 309 now, and Cincinnati, where he next located, had less population and commercial importance than Lexington, to which place his restless spirit soon took him. Augusta had less than 600 inhabitants when Bradford began his surgical career, and only 960 at the time of his death. Lexington, a remarkable town in a wonderful country, then as now, had but 1795 inhabitants when the Medical School of Transylvania University, the second in the United States and the first west of the Alleghanies, was established there in 1799, and only 6,997 when Dudley was in the zenith of his surgical work. Louisville, now a great metropolis, and for more than a generation one of the recognized centres of medical education of this country, had but 359 inhabitants when this Medical School was opened at Lexington in 1779, less than 19,000 when it was moved from Lexington to Louisville in 1837-8, and but 43,194 in 1850.

For the convenience of readers, as well as because it seemed a more natural arrangement, chronological order and logical sequence were ignored, and all of the sketches and papers in the volume placed under the following heads:

1. The McDowell Group.
2. The Transylvania University Group.
3. The University of Louisville Group.
4. The General Kentucky Group.

This involved recognized inconsistencies and defects, to the extent even of placing a few writers in more than one group, but equal or greater difficulties seemed unavoidable under any other plan which suggested itself.

Grateful acknowledgements are here made to Dr. McMurtry for invaluable advice and assistance in making this compilation; to the Filson Club for the use of both subject matter and its plates in preparing the Transylvania Group, and to all others who have aided in the work.

Confident of the intrinsic value of the facts contained in it, in spite of the defects mentioned, and of the cordial reception it will meet at the hands of the profession, arrangements have been made to put this volume in handsome binding, for presentation to such public libraries as the Association may select, and for the use of all members who may desire to incur the small personal expense necessary to enable them to possess and transmit it in this permanent form as a heritage. It is also expected that the Association at its next meeting will create a committee to present copies of this bound volume, the original McDowell letter, and all of the pictures contained in this publication, properly grouped and handsomely framed, to the Kentucky State Historical Society, at Frankfort, in the hope that they may form the nucleus of an honored and honoring collection of "The Medical Men of Kentucky," in the halls of the Capitol, which it is hoped will grow by decades or periods through all the ages.

J. N. McCormack.

Foreword To The McDowell Group

TO the late Professor Samuel D. Gross, M. D., LL. D., D. C. L. Oxon, is due the credit of rescuing from obscurity the name and fame of Dr. Ephraim McDowell, and of establishing permanently his place in history as the first ovariologist and the founder of abdominal surgery. Professor Gross was for a number of years Professor of Surgery in the University of Louisville, going later to Philadelphia where he completed his long and brilliant career as Professor of Surgery in Jefferson Medical College. While residing in Louisville Professor Gross met many of the contemporaries of Dr. McDowell, and thereby learned much of the personality and professional work of that pioneer of American surgery. Professor Gross resurrected Dr. McDowell's report of his cases of ovariectomy from the files of "*The Eclectic Repertory and Analytical Review*" published in Philadelphia, and in his Report on Kentucky Surgery to the Kentucky State Medical Society in 1852 set forth in a thorough and masterful paper McDowell's priority as the first surgeon in the world to successfully invade the peritoneum and remove an ovarian tumor. This paper was subsequently incorporated in Professor Gross' American Medical Biography, published by Lindsay and Blakiston of Philadelphia in 1861.

In 1873 the late Dr. John D. Jackson, of Danville, Ky., wrote and published a "Biographical Sketch of Ephraim McDowell," which added materially to existing knowledge of McDowell's character and surgical achievements. In this admirable sketch Dr. Jackson portrayed the claims of McDowell to the gratitude of the women of the world and also the honor due to his memory from the medical profession. Dr. Jackson urged that Dr. McDowell's remains should be removed from the neglected family burying-ground at "Traveler's Rest," the former country home of Governor Shelby, and suggested that the women of the world who have been rescued from lingering death by the operation he devised should erect a monument over his grave. Dr. Jackson was so deeply imbued with this idea that his enthusiastic appeal in the press, in the medical societies and in private correspondence won the approving interest of Professor Gross, Dr. J. Marion Sims and other prominent American surgeons.

In 1875 Dr. Jackson presented his appeal to honor McDowell's memory to the American Medical Association, and a Committee, of which Dr. J. Marion Sims was Chairman, reported a recommendation that a fund to be known as the McDowell Memorial Prize Essay Fund be established to perpetuate McDowell's

memory, and that "to the profession of the State of Kentucky be left the privilege of suitably marking his resting place." Under the conditions of the organization of the American Medical Association at that time such disposition of the subject was equivalent to its burial, although Dr. Sims did not so intend. At that time all executive business was transacted in the general session, and the *personnel* of the convention changed from year to year with the place of meeting.

In December of 1875 Dr. Jackson died, and his pupil and devoted friend, Dr. Lewis S. McMurtry, then of Danville, now of Louisville, a recent graduate in medicine, assumed the continuance of Dr. Jackson's cherished plan to place a suitable local memorial to McDowell. Dr. McMurtry brought the subject before the Kentucky State Medical Society, at Hopkinsville, in the following year, and a Committee, with Dr. McMurtry as Chairman, was appointed to erect a monument to Dr. McDowell in Danville. Dr. McMurtry undertook this difficult task with a very limited acquaintance with the medical profession of the State, and carried it to a successful conclusion despite many obstacles and much discouragement. He raised the money from subscriptions of members of the profession to provide the granite shaft which now marks McDowell's grave in McDowell Square in Danville. In addition he secured for this purpose the beautiful square near the center of Danville, and removed thereto the remains of Dr. McDowell and his wife. In response to his appeal the citizens of Danville contributed a fund to grade, enclose and beautify the square. Professor Gross, Dr. E. R. Peaslee, and other distinguished American surgeons encouraged Dr. McMurtry's efforts by sending contributions to the McDowell Memorial Fund.

This was Dr. McMurtry's first important public service rendered in behalf of the medical profession of his native State, and won for him the gratitude and esteem with which the profession has since honored him.

In 1879 the Kentucky State Medical Society convened in Danville, and this was the most brilliant occasion in its history. Professor Gross came to personally dedicate the McDowell monument, and in the presence of a large concourse of Kentucky physicians, with many distinguished surgeons from other states, among them Dr. Lewis A. Sayre, President of the American Medical Association, and Dr. Gilman Kimball, of Lowell, Mass., a famous ovariologist of that day, many prominent laymen, including the Governor of the Commonwealth, delivered the eloquent address which will be found with the other proceedings of that occasion in this number of the JOURNAL.

Thus was fixed in history for all time the fame of Kentucky's greatest pioneer surgeon.

J. N. McCormack.



EPHRAIM McDOWELL.

(By permission of the American Gynecological Society.)

1771--1830

From a painting, supposed to have been made about time his first ovariectomy was performed.

I. THE McDOWELL GROUP

BIOGRAPHICAL SKETCH OF DR. EPHRAIM McDOWELL.*

By JOHN D. JACKSON, M. D., Danville.

Dr. Ephraim McDowell was born in Rockbridge county, Va., on the 11th day of November, 1771. His ancestors belonged to the clan of the Duke of Argyle, in Scotland, but, having embraced the covenant, were so persecuted during the reign of Charles I., that they took refuge in the counties of Antrim and Londonderry, in the north of Ireland. In 1737 they removed to the Valley of Virginia, and settled upon an immense tract of land in Rockbridge county, granted by James II. to Benjamin Borden, who, in partnership with the McDowells, furnished the emigrants required to make the grant effective.

His father, Samuel McDowell, (his mother's maiden name was Sarah McClung,) was for many years engaged in political life as a member of the Legislature of Virginia, but in 1782 he was appointed by the Virginia Assembly a Land Commissioner for Kentucky, then a county or appanage of Virginia, and in the following year removed with his family to Danville, Ky., where he received the appointment of Judge of the District Court of Kentucky, which held its first sitting, and all those of its early years, in the town of Danville.

Young Ephraim McDowell received his early education at the classical seminary of Messrs. Worley and James, who taught at Georgetown, and afterwards at Bardstown. He then went to Virginia, and entered the office of Dr. Humphreys, of Staunton, as a medical student, where he remained for two or three years. Of Dr. Humphreys we know but little, save the fact that he was a graduate of the University of Edinburgh, and that in his day he enjoyed a considerable local reputation, and an extensive practice in Staunton and its vicinity. That he was a good instructor, also, is highly probable; at least we know the fact that another of his pupils, Dr. Samuel Brown, one of the founders, and one of the first corps of lecturers of the Medical Department of Transylvania Uni-

versity at Lexington, arose to high distinction.

In 1793-4 McDowell attended lectures at the University of Edinburgh contemporaneously with his countrymen, Dr. Samuel Brown, above alluded to, and Drs. Hosack and Davidge, of New York, and Brockenborough, of Virginia, all of whom subsequently gained eminence in the profession. While in attendance on the course at the University he also took a private course under John Bell, who at that time did not belong to the Faculty, and it seems that the brilliant predilections of this most able and eloquent of the Scotch surgeons of his day impressed him very profoundly. That portion of his course in which he lectured upon the diseases of the ovaries, dwelling upon the hopeless death to which their victims were inevitably fated, and merely suggesting the possibility of success following so shockingly severe an operation as any attempt at their extraction would prove, was never forgotten by his auditor, for undoubtedly it was the principles and suggestions at this time enunciated by the master which, sixteen years after, determined the pupil to attempt his first ovariectomy. He did not remain long in Edinburgh after finishing his course, but returned to Danville at the expiration of two years, preceding his return home by an extended tour afoot through Scotland, in company with two of his American compatriots, Drs. Brown and Speed. As far as we know, the degree of M. D. was not actually conferred upon him until 1823, when, entirely unsolicited on his part, the University of Maryland honored itself by conferring upon him the honorary degree of M. D. The Medical Society of Philadelphia, at the time the oldest and most distinguished of the kind in this country, had sent him its diploma in 1807.

Upon his return to Danville in 1795, Dr. McDowell at once entered upon the practice of his profession and, commencing as he did, with the eclat of an attendance upon the then most famous medical school of the world—for Edinburgh at that time held the position since occupied by Paris, and now held by Vienna, as the centre of medical science—he soon assumed the first professional position

*Reprinted from the Richmond and Louisville Medical Journal, 1873.

in his locality, and speedily advancing the extent of his reputation within a very few years, became known throughout all the Western and Southern States as the first surgeon west of Philadelphia. For a quarter of a century indeed, or until Dr. Benjamin W. Dudley of Lexington, came upon the field, and as a lecturer upon surgery yearly came before large classes of young men assembled at the Medical Department of Transylvania University from all portions of the Ohio and Mississippi Valleys, had an opportunity for extending a reputation such as no man in the West ever had before him, we may say that Dr. McDowell stood without one to dispute his position as *facile princeps* in surgery west of the Alleghanies.

During this time his practice extended in every direction, persons coming to him for treatment from all the neighboring states, and he frequently taking horseback journeys for hundreds of miles, generally the only mode of travel for long distances at that day, when neither turnpikes nor railways existed, to operate upon persons whose difficulties were of such a nature as to prevent their visiting him at Danville. As far as is known, he was in the habit of performing every surgical operation then taught in the science. In lithotomy he was extremely successful; up to 1828 he was known to have operated twenty-two times without a single death. For strangulated hernia he also operated in a large number of cases, and we have good reasons for believing that he successfully extirpated the parotid gland long before McClellan or any other American surgeon had attempted it. Indeed, there was scarcely anything from a simple amputation to tracheotomy which was to be done but that, if Dr. McDowell was accessible, he was sent for to perform it.

It was in the winter of 1809, when he had been practicing his profession for fourteen years, that he was sent for to see Mrs. Crawford, residing in Green county, Kentucky, some sixty miles from Danville, who was thought by her doctors to have gone long beyond her time in pregnancy, or to be the subject of extra-uterine foetation. McDowell found her trouble really to be an ovarian tumor, rapidly hastening to a fatal termination. To quote the graphic description of Dr. Gross: "After a most thorough and critical examination, Dr. McDowell informed his patient, a woman of unusual courage and strength of mind, that the only chance for relief was the excision of the diseased mass. He explained to her, with great clearness and fidelity, the nature and hazard of the operation: he told her that he had never performed it, but that he was ready, if she were willing, to undertake it, and risk his reputation upon the issue, adding that it was an experiment, but an experiment well worthy of trial. Mrs. Craw-

ford listened to the surgeon with great patience and coolness, and, at the close of the interview, promptly assured him that she was not only willing, but ready to submit to his decision; asserting that any mode of death, suicide excepted, was preferable to the ceaseless agony which she was enduring, and that she would hazard anything that held out even the most remote prospect of relief. The result has been long before the profession. Mrs. Crawford submitted to the operation, and thus became the first subject of ovariectomy of whom we have any knowledge."

Mrs. Crawford was forty-seven at the time of the operation, and died on the 30th of March, in 1841, aged seventy-eight.

Although the success in Mrs. Crawford's case had been everything which could be desired, it was not until seven years afterward, and when he had twice repeated the operation, that he published any account of it. In 1816 he prepared a brief account of his first three cases, a copy of which he forwarded to his old preceptor, John Bell, who was then traveling on the Continent for his health, and had left his patients and professional correspondence in the charge of Mr. John Lizars. Though Mr. Bell lived until 1820, he never returned to Edinburgh, and for some reason the communication of his old pupil failed to reach him. Another copy of the report, however, was sent to Philadelphia for publication, and appeared in the *Eclectic Repertory and Analytical Review*, for October, 1816, and will follow this paper.

The brevity and the rather loose manner in which his first cases were recorded, exposed Dr. McDowell to criticism, and Dr. Henderson and Dr. Michener, of Philadelphia, each, in articles in the *Repertory*, reviewed him rather sarcastically and doubtingly, while Dr. James Johnson, the caustic editor of the *London Medico-Chirurgical Review*, did not hesitate to take advantage of the opportunity, and declared outright his total disbelief of Dr. McDowell's statements. A few years thereafter, when the accuracy of the report had been fully confirmed, he, however, frankly acknowledged his previous error, saying: "A back settlement of America, Kentucky, has beaten the mother country, nay Europe itself with all the boasted surgeons thereof, in the fearful and formidable operation of gastrotomy with extraction of diseased ovaries. * * * There were circumstances in the narrative of the first three cases that raised misgivings in our minds, for which uncharitableness we ask pardon of God and of Dr. McDowell, of Danville."

In the *Repertory* for October, 1819, he reported two more cases, and, in connection with them, incidentally alluded to his critics and their criticisms to this effect:

"I thought my statement sufficiently explicit to warrant any surgeon performing the operation, when necessary, without hazarding the odium of making an experiment, and I think my description of the mode of operation, and of the anatomy of the parts concerned, clear enough to enable any good anatomist possessing the judgment requisite for a surgeon, to operate with safety. I hope no operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon ever incomprehensible. Such have been the bane of the science, intruding themselves into the ranks of the profession, with

destructive to their patients, and disgraceful to the science. It is by such the noble science has been degraded, in the minds of many, to the rank of an art."

In the summer of 1822 he made a long horseback journey of some hundreds of miles into Middle Tennessee and back, and performed ovariectomy with a successful result upon Mrs. Overton, who resided near the Hermitage, the residence of the late President Jackson. Mrs. Overton was enormously obese, and he had to cut through four inches of fat upon the abdomen. The only assistants he had in the operation, as we have been informed, were General Jackson and a Mrs. Priest-



TRAVELERS' REST

Near Danville, the home of Isaac Shelby, first and sixth Governor of Kentucky. Here Dr. McDowell was married to Sarah Shelby, daughter of the Governor, in 1802, and here they both lay buried until their bodies were removed to Monument Square, Danville, in 1879.

no other qualification, but in boldness in undertaking, ignorance of their responsibility and indifference to the lives of their patients; proceeding according to the special dictate of some author as mechanical as themselves, they cut and tear with fearless indifference, incapable of exercising any judgment of their own in cases of emergency; and sometimes without possessing the slightest knowledge of the anatomy of the parts concerned.

"The preposterous and impious attempts of such pretenders can seldom fail to prove

ley. General Jackson seems to have been greatly pleased with the Doctor and had him to go to his house and remove a large tumor growing from the neck and shoulder of one of his negro men. Dr. McDowell's charge for his operation upon Mrs. Overton was five hundred dollars, but the husband, with a commendable generosity, gave a check upon one of the Nashville banks for fifteen hundred dollars, which upon the Doctor's presenting for payment, and discovering the presumed error for the first time, sent a messen-

ger back to Mr. Overton to have it corrected, but that gentleman replied that, far from being a mistake, he felt that he had not even then made a full compensation for the great service which Dr. McDowell had rendered.

How many times during his career he had occasion to perform ovariectomy is not now certainly known. He seems to have been fonder of the scalpel than the pen; indeed, to have been of that class of mankind, of which we have all seen specimens, even among the ablest and most cultivated, who have a natural antipathy to writing. He is said to have kept no notes of his cases, and with the exception of the two communications above quoted, and in 1826, when many tried to wrest his honors from him, a card to the profession, and addressed especially to the "Medical Faculty and Class at Lexington," which he was induced to publish, defending his veracity and claims to having been the first to perform and establish the feasibility of the removal of diseased ovaries, is about all he wrote for publication regarding his operations. However, his nephew, Dr. Wm. A. McDowell, who was for five years his pupil, and two years his partner, tells us that up to 1820 his uncle had done seven cases, six of which he witnessed, and that six of the seven were successful. After the removal of this nephew from Kentucky to Fincastle, Virginia, Dr. Alban G. Smith succeeded to his position as partner to Dr. Ephraim McDowell, and while with him Dr. Smith himself twice performed ovariectomy. The younger McDowell stated that he had reliable testimony of his uncle having during his life operated at least thirteen times, exclusive of the two cases Dr. Smith operated upon, when they were in partnership, and that of the cases operated upon by his uncle subsequent to his retiring from partnership, he had personal knowledge of the recovery of two. This would make a total of thirteen cases, with eight recoveries.

Dr. McDowell seems to have been very careless of either his present or posthumous fame, and to have originally drawn up the report of his cases at the repeated solicitation of his nephew, Dr. James McDowell, who, up to the time of his premature death, had been the partner of his uncle, as his cousin William, to whom we have alluded, afterwards was. The idea that his success would be pleasing to his former preceptor, John Bell, to whom he felt he owed his determination to perform the operation, according to his nephew, seemed more than all else to have induced him to put his cases before the professional world.

Long after all dispute of the authenticity of Dr. McDowell's cases had ceased, the medical literature of the past was ransacked to find some one who had preceded him in the

operation. Indeed, until the critical investigations of Dr. Gross, it was generally believed that L'Aumonier, Dzondi, and Galenzowski had all preceded him, by having each done at least a single ovariectomy. Going to the original records of these gentlemen, however, it was found that the first had only punctured an abscess of the ovary, that Dzondi's was simply a case of gastrotomy upon a boy for a pelvic tumor, and Galenzowski's case while really an imperfect ovariectomy, was not done until 1827, eighteen years after the first case of McDowell. When Dr. Ephraim McDowell performed his first operation, as he said in the publication of it, he had never "heard of an attempt or success attending any operation such as this required." At present we are not aware that even the most persevering antiquarian research has been able to find an undoubted ovariectomy before the time of McDowell; for although we observe that Mr. Spencer Wells, in his recently published history of the origin and progress of ovariectomy, says, on the authority of Dr. Washington L. Atlee, that Dr. Robert Houston operated near Glasgow in 1701, and that "from this case it will appear that ovariectomy originated with British surgery, on British ground," yet a reference to the original record shows very plainly that Dr. Houston was never really an ovariectomist, in the sense of his having removed an ovary, his operation, like L'Aumonier's, consisting of laying open the diseased ovary and evacuating a large quantity of gelatinous fluid, when, as he says, "I squeezed out all I could and stitched up the wound in three places almost equidistant." We observe that Dr. Atlee, in his volume on "Ovarian Tumors," dedicates the book to his brother, Dr. John L. Atlee, and to the memory of "Dr. Ephraim McDowell, the Father of Ovariectomy." Even had the operation been done many times before, forgotten or unnoticed, as the case lay among the dead records of the past, it should not and would not derogate at all from the glory of Dr. McDowell, who had never heard even of any attempt to perform it, and who, after his performance of it, first succeeded in establishing it as a legitimate operation in the medical world. When we think of one living on the border of Western civilization, in a little town of between four and five hundred inhabitants, far removed from the opportunity of consultation with any one whose opinion might be of any value to him in such a case, and near a thousand miles away from the nearest hospital or college dissecting-room at which he might have had opportunity of studying and practicing upon some body who had perished of the disease before performing a new untried operation of such fearful magnitude upon the living, and learn of his having pondered and contemplated all the difficulties, and

with a full sense of the dangers liable to environ him in the attempt, and then, without ether or chloroform, and by the aid of probably only one fully skilled assistant and two or three medical students, see him attempt and successfully perform the first ovariectomy, our admiration for Dr. Ephraim McDowell's courage and skill rises to its full height, and we feel that he is justly entitled to have applied to him Horace's words, describing the stoutness of heart of the first mariners who had the boldness to go down into the sea in ships:

*Ille robur et ase triplex,
Circa pectus erat, qui fragilem truci
Commisit pelago ratem
Primus.*

Dr. McDowell, in person, was nearly six feet in height, of commanding carriage, of a rather florid complexion, with black eyes and dark hair, and deemed in youth a quite handsome man. He was always remarkable for his strength and agility, and while at Edinburgh was pronounced the swiftest foot-racer of the whole University. He was one of the kindest-hearted and most amiable men, overflowing with cheerfulness and good humor, and readily approachable by the world. He seemed to be totally devoid of all reserve and austerity, a tinge of which is generally characteristic of the scholar and professional man, and never appeared to assume that there was any difference between the plane of his vocation and that of the humblest unlettered artisan. This seemed instinctively to strike all who came in contact with him, and an easiness amounting almost to familiarity existed between him and his fellow-citizens. So true was this, that with the masses, probably because of this very fact, he was not generally appreciated for his true worth. A man in manner arrogating to himself nothing above the populace, as may readily be believed, would not, save by those gifted with something above common penetration be acknowledged to be superior to their sphere. Never, however, was any of this air of familiarity in the slightest degree tinged with professional demagoguery. His bitterest enemies did not once accuse him of this. By a gentle man of keen perception, yet living, whose father's family physician he was, I am told that never was there a man whose life was freer from the acts of the charlatan, or more entirely devoid of all the petty "tricks of trade," which too frequently disgrace the medical profession. While in the sick room, though he was fond of gossiping about local matters and the events of the day, he habitually refrained from discussing things medical, or any of the affairs of his rivals, with some of whom he was publicly known to be on anything but good terms. While in daily

competition with certain members of the profession, whose chief strength was in the application of such arts, they and their artifices were held in supreme contempt by him. From what we can learn, one of the constant endeavors of these gentlemen, who knew that they never could approach McDowell by fair competition, was to try to train the community to believe that there was a sort of essential incompatibility between surgery and medicine, and that because he was infinitely their superior in surgical knowledge and manual dexterity, just by so much was he their inferior in all the intricacies of the practice of medicine, whose arcana were not so appreciably evident to the public as the more demonstrable work of the surgeon. Or, as they were in the habit of putting it, that while he was a bold surgeon, he was but a poor "fever doctor." So far from this being the case, however, he kept himself fully abreast with the progress of medicine by reading all that was new on the subject, and was probably really as far in advance of his competitors in physic as in surgery. Certainly we now know that in the treatment of fever, he was in some respects ahead of his time, though at variance with the generally accepted doctrines of his day and the prevailing custom of the physicians of his section. At that period it was customary to give more or less mercury in the progress of every fever and, after a dose of calomel or blue-mass, to allow the patient cold water was thought to be recklessly dangerous. The standard treatment of the country was, to let the patient have no drink but what was warmed, and this usually consisted of water in which a piece of burnt bread-crust or warm toast had been soaked. On the contrary, Dr. McDowell used to tell his patients that there was no danger in cold water while the skin was hot and, while such was the case, he allowed them to use it *ad libitum*. I have heard an old gentleman, who lived in an adjoining county tell how, when he was a boy, and one of his brothers lay very ill of a fever, Dr. McDowell was sent for, and of the anxious fears of the family, while obeying the directions of the Doctor, who had the patient laid naked upon the floor, and bucketful after bucketful of cold water poured over him, to his great relief and ultimate recovery. In medicine he looked upon Sydenham and Cullen as the master minds and set their works above all others on practice.

To the system of over-drugging, then so common, he was an enemy, believing that as then given by the mass of the profession, without discrimination, drugs were producing, in the aggregate, more harm than good. Though practicing medicine with more than ordinary ability, yet his inclinations were always especially toward surgery, and it was his custom, when practicable, to throw as far

as possible the medical practice into the hands of his partner.

He was a most accomplished anatomist, and used every winter, in conjunction with his office students, of whom he generally had at least two or three, to dissect in the upper story of an old abandoned building which had formerly been the county jail; and his office, in the course of time, had quite a number of anatomical preparations, the work of his own hand. When having determined upon the performance of any capital operation, his custom was to drill beforehand his students who were to assist him thoroughly, until each was perfect in the part he was to perform: not only this, but he compelled each to give a succinct history of the nature of the difficulty requiring the operation, the anatomy of the parts involved, the tissues to be divided, and then to rehearse the different steps of the operation itself. As an operator, it was the invariable opinion of all competent judges that, for coolness and dexterity, they had never seen his equal. From the moment he took the knife in his hand, preparatory to operating, he seemed to become enthused, and to the bystanders looked like quite a different man.

He possessed an excellent medical library for his day and locality, and was in the habit of purchasing most of the principal new works on their issue. While having a fair knowledge of the classics, yet most of his professional leisure he gave to history and belles-lettres. Burns was an especial favorite with him, and from his familiarity with the Scottish dialect, acquired while in Edinburgh, his readings and quotations were given with the idiom as perfect as if he had been a native of "Auld Reekie."

As a citizen, he was charitable and public spirited, favoring and contributing, by his means, to most of the enterprises which promised good to the community in which he resided. He was an especial friend to Centre College, cooperating largely by his influence and money toward its foundation, and was indeed one of its original incorporators and donors. This, too, although its government was the Presbyterian Church, while he himself was, in religion, an Episcopalian. The site of the present Episcopal edifice, Trinity Church, was a contribution from Dr. McDowell.

In 1802 he married Sarah, a daughter of Governor Isaac Shelby, with whom he lived happily, and raised a family of two sons and four daughters, only three of whom survived him. Mrs. McDowell was his survivor by ten years.

While in the full vigor of life, and in the midst of his professional work, he contracted an "inflammatory fever," and, after an illness of a fortnight, died in Danville on the 20th day of June, 1830, and was buried at

Travelers' Rest, one of the estates of the Shelby family, some six miles south of the town.

When we consider the results to mankind of the labors of Dr. McDowell, we do not hesitate to rank him with the great benefactors of the race. Before the 19th century, of the thousands of women afflicted with ovarian dropsy, to not one could the most astute or boldest of the healing profession promise anything hopeful. The promise of the doctor, when called to such a case, was that of the priest, and not much more; for he could only say: "two years of life, filled with gradually increasing misery, is the full compass of the days allotted to a woman who may find that she has an ovarian tumor, and unless God works a miracle in your case, such is your inevitable fate." But now, since the establishment of ovariectomy by McDowell, the matter stands quite differently, for the physician of our era to-day, can say; "it is true that without an operation you are inevitably doomed to death after some two years of miserable suffering; but by ovariectomy you have seventy chances or more out of a hundred, much better than one undergoing an amputation of the thigh, not only of recovery, but a full restoration to health."

Dr. Peaslee has made a calculation, based on this known law of the length of life of a woman who had an ovarian tumor uninterfered with, and the average age of all the recorded cases of ovariectomy up to 1870, and the probabilities of longevity of healthy women of that age, according to the most approved tables of life insurance, and has shown that, "in the United States and Great Britain alone, ovariectomy has, within the last thirty years, directly contributed more than thirty thousand years of active life to woman: all of which would have been lost had ovariectomy never been performed"; to say nothing of saving her more than a thousand years of untold suffering. With these facts before them, most devoutly indeed should all womankind bless the name of McDowell.

To one living in Athens in the days of the glory of ancient Greece, and conferring such a boon on the human race as ovariectomy, rank among the demigods with a temple and an altar, would have been accorded him by acclamation of the people. Had he lived in the palmy days of the Roman Republic, the highest civic honors, a medal and a statue, if not a shrine in the temple, would have been his by a decree of the Senate; and had Ephraim McDowell been born and flourished in any one of the principalities of Europe, instead of the United States, long since would the Government, proud of such a son, have conferred titles of distinction upon him and his children while living, and erected a fitting monument to his memory when dead. But it seems that to us of the boasted Great Repub-

lie of the Western World, the proverbial charge regarding the ingratitude of Republics is literally applicable in the case of the subject of our sketch. Such were the thoughts which crowded upon us recently, when we made a pilgrimage to the burial-ground of the Shelby family at Travelers' Rest, and after climbing the stone-wall enclosure, finally succeeded in struggling our way through the brambles, briars, tall weeds, and rank grass, to the neglected, lichen-covered sandstone slab, with simply the name of Ephriam McDowell upon it, which lies superimposed above

erect the tallest shaft in all the land to mark his resting-place, she would but justly confer the worthiest of honor on one of her children; yet does his fame not rest with us alone, nor is the beneficence of ovariectomy confined alone to our part of the globe.

Like Jenner, McDowell has been a benefactor for the generations of all times, and all countries, and as a few years ago the world at large contributed to the statue of Jenner, now erected in Hyde Park, London, so do we think it most fitting that all nations be allowed to contribute to a suitable statue to Me-



THE GRAVES OF DR. AND MRS. McDOWELL AT TRAVELERS' REST

the remains of one to whom the whole world should feel deeply grateful, and of whom Kentucky and the American Republic may always be justly proud.

While Kentucky, and nearly every state of the Republic, have at different times voted monuments, statues or paintings, to one and another political favorite or military idol of the day, the worthiness of the commemoration of none of whom is to be compared to that of McDowell, and while if our State should

Dowell, to be erected in Danville, the scene of the first ovariectomy. But since Dr. McDowell has been woman's special benefactor, we think it would be especially appropriate that the gratitude of the women of all nations should be allowed to display itself in the erection of a fitting memorial to their friend. Indeed, that a bronze statue of life size should be erected solely from the voluntary contributions throughout the world of those who may owe their lives to the operation of ovariectomy.

THREE CASES OF EXTIRPATION OF DISEASED OVARIES.*

By EPHRAIM McDOWELL, M. D.

"Case I. In December, 1809, I was called to see a Mrs. Crawford, who had for several months thought herself pregnant. She was affected with pain similar to labor pains, for

was to one side, admitting of an easy removal to the other. Upon examination, per vaginam, I found nothing in the uterus, which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation.



THE FIRST OVARIOTOMY

Copy of an idealized picture, said to have been painted from a sketch and description by Dr. Albin Goldsmith, a partner of Dr. McDowell, and an assistant at this and other of his operations.

By the courtesy of Dr. Fayette Dunlap, Danville

which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy, that two physicians who were consulted in her case requested my aid in delivering her. The abdomen was considerably enlarged, and had the appearance of pregnancy, though the inclination of the tumor

She appeared willing to undergo an experiment, which I promised to perform, if she would come to Danville, the town where I live, a distance of sixty miles from her place of residence. This appeared almost impracticable by any though the most favorable conveyance, though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James McDowell, M. D., I commenced the operation,

*A reprint from the *Electric Repertory and Analytical Review*, of Philadelphia, October, 1816, then the only medical journal published in this country.

which was concluded as follows: Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation, I made an incision about three inches long, from the musculus reetus abdominis, on the left side, continuing the same nine inches in length, parallel with the fibres of the above-named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during the journey. The tumor then appeared full in view, but was so large that we could not take it away entire. We put a strong ligature around the Fallopian tube near to the uterus; we then cut open the tumor, which was the ovarium, and the fimbriated part of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous-looking substance; after which we cut through the Fallopian and extracted the sac, which weighed seven pounds and a half. As soon as the external opening was made, the intestines rushed out upon the table, and so completely was the abdomen filled by tumor, that they could not be replaced during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side, so as to permit the blood to escape, after which we closed the external opening with the interrupted suture, leaving out at the lower end of the incision the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressing, put her to bed, and prescribed a strict observance of the antiphlogistic regimen. In five days, I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future and in twenty-five days she returned home, as she came, in good health, which she continues to enjoy."

"Case II. Since the above ease, I was called to a negro woman who had a hard and very painful tumor in the abdomen. I gave her mercury for three or four months, with some abatement of pain, but she was still unable to perform her usual duties. As the tumor was fixed and immovable, I did not

advise an operation, though, from the earnest solicitation of her master and her own distressful condition, I agreed to the experiment. I had her placed upon a table, laid her side open, as in the above case, put my hand in, found the ovarium very much enlarged, painful to the touch, and firmly adhering to the vesica-urinary and fundus uteri. To extract, I thought would be instantly fatal; but by way of experiment, I plunged the scalpel into the diseased part. Much gelatinous substance, as in the above case, with a profusion of blood, rushed to the external opening, and I conveyed it off by placing my hand under the tumor and suffering the discharge to take place over it. Notwithstanding my great care, a quart or more of blood escaped into the abdomen. After the hemorrhage had ceased, I took out as cleanly as possible the blood, in which the bowels were completely enveloped. Though I considered the case as nearly hopeless, I advised the same dressings and the same regimen as in the above ease. She has entirely recovered from all pain, and pursues her ordinary occupation."

"Case II. In May, 1816, a negro woman was brought to me from a distance. I found the ovarium much enlarged, and as it could be easily moved from side to side, I advised the extraction of it. As it adhered to the left side, I changed my plan of opening to the linea alba. I began the incision, in company with my partner and colleague, Dr. Wm. Coffey, an inch below the umbilicus, and extended it to within an inch of the os pubis. I then put a ligature around the Fallopian tube, and endeavored to turn out the tumor, but could not. I then cut to the right of the umbilicus and above it two inches, turned out a scirrhus ovarium, weighing six pounds, and cut it off close to the ligature put around the Fallopian tube. I then closed the external opening as in former cases, and she complaining of cold and chilliness, I put her to bed prior to dressing her; then gave her a wine-glassful of cherry-bounce and thirty drops of laudanum, which soon restoring her warmth, when she was dressed as usual. She was well in two weeks, at the end of which time the cord was taken away, and she now, without complaint, officiates in the laborious occupation of cook to a large family."

Danville, Kentucky.

FACSIMILE OF A LETTER FROM DR. McDOWELL.*

WRITTEN THE YEAR BEFORE HIS DEATH.

Sir Denville January 2^d 1829

At the request of your father I take the liberty of addressing you a letter giving you a short account of the circumstances which lead to the first operation for diseased Ovaries; I was sent for in 1809 to deliver a Mrs. Crawford near a town of twins; as the two attending physicians supposed. upon examination per Vagina I soon ascertained that she was not pregnant; but had a large tumour in the Abdomen which moved easily from side to side. I told the Lady I could do her no good and candidly related to her her deplorable situation; I informed her that John Bell Hunter M.D. of Woodford one of the first and most eminent Surgeons in England and Scotland had uniformly declared in

*This letter, detailing the circumstances leading up to and attending the first ovariectomy, was written to Dr. Robert J. Thompson, then a medical student in Philadelphia, but always a citizen, and until his death in 1887, a highly respected physician, of Woodford county, Kentucky, where three of his children, including Dr. R. J. Thompson, junior, still reside. It is expected that the original letter, handsomely framed, will be given an honored place on the walls of the State Historical Society, in the Capital Building at Frankfort. As will be seen, this letter was written before the days of stamps and envelopes.

then surmised that such was the danger
 of Peritoneal Inflammation, that opening
 the abdomen to extract the tumour was
 an inevitable death. But notwithstanding
 this, if she thought herself prepared
 to die, I would take the lump from
 her if she could come to Dances; she
 came in a few days after my return
 home and in six days I opened
 her side and extracted one of the
 ovaries which from its diseased and
 enlarged state weighed upwards
 of twenty pounds; The Inflammation as
 soon as an opening was made run out
 upon the table remained out about
 twenty minutes and being upon
 Christmas day they became so cold
 that I thought it best to bathe them
 in the cold water previous to my
 replacing them; I then returned them

I stitched up the wound and ^{she} was perfectly
 well in 25 days; Since that time
 I have operated eleven times and have
 lost but one; I now can tell at once
 when relief can be obtained by exam-
 ination of the tumour if it floats
 freely from side to side of pelvis free
 from adhesions except at the lower part
 of the abdomen; I advise the operation,
 allowing no fear from the inflammation
 that may ensue; I last spring operated
 upon a Mrs Bryant from the mouth of Elk
 River below Arost Boit I opened the
 abdomen from the umbilicus to the pubes
 and extracted, between hands, the
~~solid~~ contained the mass ^{of} ~~the~~ ^{solid}
 matter ~~the~~ I was smart, ^{at} ~~the~~ ^{the} ~~the~~ ^{the}
 patient or weakened except ^{the} ~~the~~ ^{the}
 is now living; from being successful
 in the above operations several young
 men with ruptures have come
 to me; I have uniformly lost the

ring open just the Intestines up if down
then cut the ring all round very green
of an Inch then spread the parts
closely together and in every case the
cure has been perfect; therefore it appears
to me a mere humbug about the

Dr. J. H. Hall 25

Mr Robert Thompson

Student of Medicine

No 59 Grace Philadelphia

Street - Pennsylvania

Danger of the Sympetomal Intestine has
much talked about by most Surgeons
after working your Health and

Yours ^{truly} sincerely
G M Lancelle

JOHN DAVIES JACKSON. M. D.

By LEWIS S. McMURTRY, M. D., L.L. D.

John Davies Jackson was born in Danville on December 12, 1834 and died in that place on December 8, 1875, not completing the forty-first year of his life. He was the eldest child of John and Margaret Jackson, both natives of Kentucky. He received his education at Centre College in Danville, from which institution he received the degree of A. B., in 1854. He was an excellent student, and early gave evidence of the power of close applica-

ing disposition, public recognition of his ability and qualifications came very slowly; but he was never idle. He gave himself with enthusiasm and close application to the study of medical literature. He also began the study of the French language, in which he became quite proficient and thereby familiarized himself with the best medical literature of Europe. The unremitting labor of these early years of practice laid the foundation of broad scientific culture which distinguished his later career.

Dr. Jackson had become fairly established



DOCTOR JOHN D. JACKSON

1834--1875

tion. Immediately after his graduation he entered upon the study of medicine, and in the autumn of 1854 matriculated in the Medical Department of the University of Louisville. After one course in the University, he went to Philadelphia and entered the Medical Department of the University of Pennsylvania, from which he graduated with the degree of M. D., 1857.

He returned immediately to his native town of Danville and entered the practice of medicine. He never ceased to be a student. Being naturally of modest demeanor and retir-

ing disposition, public recognition of his ability and qualifications came very slowly; but he was never idle. He gave himself with enthusiasm and close application to the study of medical literature. He also began the study of the French language, in which he became quite proficient and thereby familiarized himself with the best medical literature of Europe. The unremitting labor of these early years of practice laid the foundation of broad scientific culture which distinguished his later career.

tice. He gave himself wholly to his professional work. He resumed the study of the French language and began to collect a library which in time became one of the finest private medical libraries to be found in this country. His collection was very rich in old copies of the medical classics, and his table was always filled with the very best current literature of the day.

Dr. Jackson at this time realized the great importance of advanced clinical study and, in order that he might repair the deficiencies of his early training, he went to New York and devoted himself to private courses upon special branches in medicine. He was especially interested in surgery, and applied himself with enthusiasm to the most recent advances in surgical pathology and practice. Almost every year from 1869 until his death he spent some months in New York in this way. In 1869 he contributed an article to the *American Journal of Medical Sciences* upon "Trichiniasis" which is one of his most valuable publications. This essay shows thorough familiarity with the literature upon this subject in all languages. Very soon after his return from the army he established a private dissecting-room and began to take pupils for instruction in the elementary branches of medicine. He gave thorough courses in practical anatomy and in surgical operations upon the cadaver. He made numerous contributions to the medical literature, all of which were of practical character, and based upon thorough knowledge of the subject. He attended the annual meetings of the American Medical Association and at the time of his death was the first vice-president of that body. He founded the Boyle County Medical Society, which became one of the most efficient organizations in the State, and was a regular attendant and contributor to the annual meetings of the Kentucky State Medical Society.

In order to perfect his professional knowledge, Dr. Jackson went to Europe in 1872. He attended the meeting of the British Medical Association as a delegate from the American Medical Association, and spent much time in London, Edinburgh, Paris, and other European centers. In Paris he spent several months in pursuit of special studies. He made numerous acquaintances among prominent teachers of Europe, and by correspondence kept in touch with members of the profession there during the remainder of his life.

Upon his return home after his visit to Europe, his labors became more extensive. His practice extended throughout central Kentucky, and his services were commanded as a consultant very extensively. His growing practice, however, did not prevent his devotion to the study of medical science, which he cultivated with the utmost devotion

throughout his career. In 1873 he translated Farabeuf's "Manual on the Ligation of Arteries," which was published by J. P. Lippincott & Co., of Philadelphia. About the same time he wrote a biographical sketch of Dr. Ephraim McDowell (see page 11) which attracted renewed attention to the achievements of this great pioneer surgeon. The idea of erecting a monument to the memory of McDowell originated with Dr. Jackson, and he pressed the subject upon the attention of the profession until it received consideration by the Kentucky State Medical Society and the American Medical Association. In the spring of 1873, while engaged in an autopsy Dr. Jackson infected one of his fingers, and suffered with a severe systemic infection. His illness taxed severely his strength, and he never fully recovered. During his convalescence he developed pulmonary tuberculosis, and after a long illness succumbed to this disease. As previously stated his death occurred in December, 1875, before the completion of his forty-first year.

Dr. Jackson possessed superior talents, high scholarship, untiring industry, and a mind of singular alertness and vigor. He loved science for its own sake, and looked upon his profession as a great privilege of service and duty. His ideals were high, and he lived up to them with incorruptible honor and integrity of character. He performed many of the most important operations in surgery, and his contributions to surgical literature show a profound knowledge of the subjects treated therein. As a writer he was clear and concise, and his language gave evidence of scholarly attainments. During the last year of his activities, he was intensely interested in the researches of Lister, which were attracting great attention at that time, and had he lived he would have been one of the first to grasp and apply in surgical practice the great principles of the antiseptic system. He was a model preceptor, and inspired his pupils with ambition and a thorough appreciation of the high aims and purposes of the profession. He was a delightful companion, and was devotedly loved by his personal friends and those to whom he administered as a physician and surgeon. He was one of the most sincere and steadfast friends.

In personal appearance he was above the medium height, very erect and rather slender. He had fine bluish-gray eyes, a firm expression about the mouth and a forehead indicative of intellect. In his habits he was systematic, and in all his engagements he was promptness itself.

Dr. Jackson was unmarried, his social visits were few, and his entire life was devoted to his profession.

DEDICATORY ADDRESS.

By PROF. SAMUEL D. GROSS, M. D., LL. D.
D. C. L. Oxon.

Gentlemen of the Kentucky State Medical Society, Ladies and Gentlemen:

Nearly fifty years ago the citizens of Danville, then a small, obscure village, carried to its last resting place all that was mortal of the man whose monument will henceforth mark an era in the history of the medical profession, and of the people of Kentucky. The announcement of his death, after a brief illness, in the fifty-ninth year of his age, on the

Of those who were present on that melancholy occasion, one after another has disappeared. New generations have sprung up, and a scene that wrapped a whole community in sorrow and caused general regret in the American medical profession is, with the most of the people of this section of Kentucky, a mere tradition. The marble slab erected by the hand of affection over the mortal remains bears the simple but significant inscription, EPHRAIM McDOWELL.

Who was this man, this Ephraim McDowell, in honor of whose memory we have assembled here this evening? Was he a hero whose body



THE MONUMENT

20th of June, 1830, caused deep and widespread grief in the community in which he had so long lived, and of which he had been so conspicuous, honored, and beloved a member. By none was his loss more profoundly deplored than by the poor of Danville and its neighborhood, who had been so frequently benefited by his skill and so frequently the recipient of his bounty. Many a tear was shed as the body was tenderly laid in the earth, and many a sigh was heaved as the reflection came that the mantle of such a man would be long in finding worthy shoulders.

was scarred as he was leading his armies in the defense of his country? Was he a great magistrate, meeting out justice to his fellow citizens, protecting their rights, and wisely interpreting their laws? Was he a legislator, devising means for the development of the resources of his state, and the promotion of the happiness of society? Was he a great senator, like Clay or Crittenden or Webster, expounding the constitution and convulsing the American people by the power and majesty of his eloquence? Ephraim McDowell was not any of these, and yet he was none the less a

good and a wise man, nor is he any the less entitled to the world's gratitude. Following the noble vocation of a practitioner of the healing art, liberally dispensing alike to poor and rich the blessings of his knowledge and of his skill, he silently pursued the even tenor of his way, a faithful servant of his profession, with no ambition for meretricious distinction. It was here, on this very spot, that he achieved that renown which so justly entitles him to be ranked among the benefactors of his race. It was here, while engaged in the daily routine

Ephraim McDowell will be regarded in all time to come as the "Father of Ovariectomy," and as one of the master spirits of his profession. We are here this evening to place upon his tomb a wreath of immortelles, expressive of our admiration and respect, and of the gratitude of more than two thousand women rescued from an untimely grave by his operation. That his claims to this distinction are well founded the history of this operation abundantly attests. For a long time it was thought that other surgeons had anticipated



DOCTOR SAMUEL D. GROSS

1805--1884

of his calling, that he performed an exploit which no one had ever achieved before, and which, although for a long time denounced and condemned by many otherwise enlightened surgeons and practitioners as an outrageous, if not murderous innovation, is now universally admitted as one of the established procedures in surgery; an operation which, in its aggregate results in the hands of different surgeons, has already added upwards of forty thousand years to woman's life, and which is destined as time rolls on, to rescue thousands upon thousands of human beings from premature destruction.

him in this undertaking, but all the doubt that had hung over the subject was at length completely dispelled in 1852 in an address which I had the honor to read before the Kentucky State Medical Society at its annual meeting at Louisville, entitled "A Report on Kentucky Surgery." In the prosecution of my inquiries I became deeply interested in the subject of ovariectomy, and especially in the claims of McDowell as its originator. With this end in view I engaged in a long and laborious correspondence, in which I was kindly assisted by Professor Daniel Drake, Dr. William Galt, and Dr. William A. Mc-

Dowel, a nephew and at one time a partner of the great surgeon. Letters were addressed to physicians in different parts of the State, and also to the surviving members of Dr. McDowell's family, asking for information respecting the number and results of his cases, as well as the names and residences of his patients, and any other intelligence calculated to throw light upon his life and character; matters concerning which, up to that period, hardly anything definite was known. These documents are still in my possession, and will probably at no distant day be given to the public.

When this investigation was begun the origin of this operation was generally ascribed to a French surgeon, L'Aumonier, of Rouen, who, it was contended, had performed it in 1776, when McDowell was hardly five years old. More recently the honor has been claimed by our British brethren for Dr. Robt. Houston, of Glasgow, whose name appears in connection with an operation upon the ovary as early as 1771. The operation, however, has been found upon a careful examination of the history of the case to be entirely different from that of the Kentucky surgeon. The case was simply one of ovarian tumor, the contents of which were partially evacuated by an incision made through the abdomen, the cyst itself being left behind.

These and other pretensions that have been set up by different nationalities are wholly unsupported by facts; for a careful study of the cases which have been reported by their respective operators will serve to convince any unprejudiced mind that, so far from being examples of ovariectomy, they were simply instances of cystic tumors, similar to those already mentioned in connection with the names of L'Aumonier and Houston. Indeed a considerable number of such operations were performed during the last century, chiefly by French, German and English surgeons, or, as they would now call themselves, if living, gynecologists.

The first actual case of ovariectomy of which there is any authentic account occurred in this town in December, 1809, in the hands of Ephraim McDowell, and to him and to him alone is due the credit of having devised and first successfully executed the operation. All honor, then, we say, to the man who thus paved the way to a new path of humanity, since so nobly trodden by his successors! All honor to the man who had the courage and skill to do that which no man had ever dared to do before! All honor, too, to the heroic woman who, with death literally staring her in the face, was the first to submit calmly and resignedly to what certainly was at the time a surgical experiment. To her, too, let a monument be erected, not by the Kentucky State Medical Society or by the citizens of

Kentucky, but by suffering women who, with her example before them, have been the recipients of the inestimable boon of ovariectomy, with a new lease of their lives and with immunity from subsequent discomfort and distress. I know of no greater example in all history of heroism than that displayed by this noble woman in submitting to an untried operation. McDowell himself must have been startled, if not absolutely abashed, when he found how willing she was, after he had depicted to her, in the most glowing colors and in the strongest and plainest language, the risks of the operation. When a surgeon, however experienced or skillful, meets with a desperate case, and finds that, after having informed his patient that if an operation be performed it will be likely to destroy him, he is willing and ready to incur the risk, his heart often fails him and he deeply regrets that the poor sufferer ever fell into his hands. So no doubt McDowell felt upon this occasion. "Having never," he said, "seen so large a substance extracted nor heard of an attempt or success attending any operation such as this required, I gave the unhappy woman information of her dangerous situation. She seemed willing to undergo an experiment, which I promised to perform if she would come to Danville, the town where I live, a distance of sixty miles." She did come, and the experiment, as McDowell very properly calls it, was, as already stated, performed. A rapid recovery ensued, and the patient, Mrs. Crawford, a Kentucky lady, survived the operation thirty-two years, enjoying for the most part excellent health, and dying at length in the seventy-ninth year of her age. Thus, it will be seen, this heroic and courageous woman owed nearly two-fifths of her life to the skill and care of her surgeon. Our admiration of this noble woman is greatly enhanced when we reflect that the operation was performed without the aid of anesthetics, which were not introduced into practice until a third of a century afterward, as is our admiration of the surgeon when we recall the fact that he had no trained assistants to aid him in his work, executed despite the most strenuous and persistent efforts to persuade him from undertaking it.

It is not a little remarkable that no account of this operation was published until eight years after it was performed. Whether this was due to inherent modesty on the part of McDowell, to indifference to fame, to sheer apathy, to an aversion to writing, or to fear of criticism, to which such an undertaking, without a precedent in the annals of surgery, would necessarily expose him, it would be idle to conjecture. It is sufficient for my purpose to know that the first notice of it appeared in 1817, in the *Philadelphia Eclectic Repository and Analytical Review*. The com-

munication, which covered not quite three or two pages of printed matter, was entitled "Three Cases of Extirpation of Diseased Ovaria," and was drawn up so loosely and carelessly as to be well calculated to elicit adverse criticism, as indeed it speedily did both at home and abroad in a way not at all calculated to reflect credit upon the author as a literary and scientific man. The details of the cases were singularly meagre; there was nothing said respecting their origin, progress, or diagnosis, and even the operations themselves were very imperfectly described. If such operations had been performed in our day the most minute circumstances would have speedily found their way into print. The fact is McDowell possessed no facility as a writer, and he lacked that grace of diction and power of expression so well adapted to impart interest even to the driest details, and which can be acquired only by long practice. In a word, he was a stranger to the pen and had no fancy for its use. Writing was a great bore to him, a compulsory necessity. The report of his cases soon after its publication was severely criticised, and an attempt was made to throw discredit upon his statements, or, in other terms, to impugn his veracity. Had McDowell lived in our day, when intelligence flashes with lightning speed, not only from one section of the country to another but from continent to continent, such an occurrence would not have been possible.

Dr. James Johnson, the very able and learned editor of the *London Medico-Chirurgical Review*, a journal widely circulated both in Great Britain and in the United States, was especially savage and satirical. He could not imagine it to be possible that an American surgeon, living in a small, obscure village in the wilds of Kentucky, or in the backwoods of America, as he expressed it, could perform such an operation, or become a pioneer in a new branch of surgery. In commenting upon McDowell's first case, especially upon the wonderfully rapid recovery of the patient, he exclaims, apparently in holy horror and with uplifted hands, "*Credat Judæus, non ego.*" In a subsequent article, published in 1827, Johnson again calls attention to McDowell's cases, adding that of five cases reported four had recovered and only one had died. "There were circumstances," remarks this Cerberus, "in the narratives of some of the first cases that raised misgivings in our minds, for which uncharitableness we ask pardon of God, and of Dr. Ephraim McDowell, of Danville." It is presumable that this frank and manly recantation on the part of a man who occupied so elevated and influential a position as the editorship of the most widely read medical journal in the world had some effect in controlling professional sentiment and inspiring confidence in the declarations of a

surgeon whom he had only a few years before denounced as a backwoods operator unworthy of credence. Nevertheless Dr. McDowell had for a long time no imitators. Among those who, on this side of the Atlantic, had the courage to follow in his footsteps, were Nathan Smith, of New Haven, in 1821, Alban G. Smith, a partner of McDowell, in 1823, and Dr. David L. Rogers, of New York, in 1829. All of the cases terminated favorably. McDowell himself, as clearly as I could determine in preparing my report on Kentucky Surgery, operated altogether thirteen times, with the result of eight cures, four deaths, and one failure, due to an inability to complete the operation on account of extensive adhesions of the tumor; a degree of success which, considering the fact that he had no precepts except his own experience to guide him, was eminently creditable to his judgment, care, and skill, and which, although exceeded in recent times, was for a third of a century pretty much the average in the hands of his followers, both in America and in Europe. If we go to the other side of the Atlantic we shall find that the first attempt at ovariectomy in Great Britain occurred in the practice of Mr. John Lizars, of Edinburgh. This gentleman in 1825 published a beautiful monograph upon the subject, in which he gave a detailed account of four cases, with two recoveries, one death, and one an utter and disgraceful failure, due to an erroneous diagnosis, both ovaries being perfectly sound. Mr. Lizars, who was a surgeon of considerable note in his day, was led to turn his attention to this subject from having read an account of McDowell's operations, which had accidentally fallen into his hands during the absence of Mr. John Bell, McDowell's old preceptor, upon the continent, from which he never returned. The brochure here referred to was, there is reason to believe, of great service in calling to the subject the attention of European surgeons generally, the more especially as it embraced a full report of the Kentucky cases, which, up to that period, had lain, as it were, in a state of dormancy. Nothing, however, of any moment was done anywhere, either at home or abroad, until 1842, when ovariectomy received a new impulse at the hands of Dr. Charles Clay, of Manchester, England, followed shortly after by Dr. Frederick Bird, of London, and the two brothers Altee, John and Washington, of Pennsylvania, the first case of the former having occurred in 1843 and that of the latter in 1844. To these gentlemen is unquestionably due the great merit of reviving the operation and of placing it upon a firm and immutable basis as one of the established procedures in surgery. Their attempts to generalize the operation met every where with great opposition and even obloquy. Dr. Clay, who introduced it into England, in referring

to the subject states that he had to wade through much vexatious opposition, great misapprehensions, and gross misunderstandings; and the experience of Dr. Washington L. Atlee was still more trying and annoying. In an address which he delivered in 1872 before the Philadelphia County Medical Society, entitled "A Retrospect of the Struggles and Triumphs of Ovariectomy in Philadelphia," he depicts in glowing language the obstacles which this operation had to encounter in this country and in his own city. "Ovariectomy," he exclaims, "was every where derided. It was denounced by the general profession, in the medical societies, in all the medical colleges, and even by the majority of my own colleagues. I was misrepresented before the medical public, and was pointed at as a dangerous man, and even as a murderer. The opposition went so far that a celebrated professor, a popular teacher and captivating writer, in his public lectures, invoked the law to arrest me in the performance of this operation." This rancorous opposition, however, founded as it was upon ignorance and prejudice, gradually wore away, and the men who were most clamorous in keeping it up either disappeared from the active scenes of life, or yielded gracefully to the light of reason and experience. Dr. Clay, writing in 1874, states that he had operated upon two hundred and seventy-six cases, while those of Dr. Atlee, at the time of his death, less than a year ago, amounted to three hundred and eighty-seven. Mr. T. Spencer Wells, of London, whose brilliant career as an ovariectomist began in 1858, wrote to me on the 29th of April, 1879, that he had just had his nine hundred and thirty-eighth case. Mr. Thomas Keith, of Edinburgh, whose career in this field of surgery is also wonderfully brilliant, informs me, in a letter written a short time previously to that of his English confrere, that he had operated, up to that date, two hundred and eighty-four times. Dr. John L. Atlee has operated fifty-seven times; Dr. Alexander Dunlap, of Ohio, one hundred and forty-three times; Edmund R. Peaslee, seventy-seven times; Professor T. Gaillard Thomas, one hundred and twenty-six times, and Dr. Gilman Kimball, the oldest and most renowned American ovariectomist since the death of Dr. Washington L. Atlee, two hundred and forty times. Professor Briggs, of Nashville, who has operated upward of fifty times, recently had three cases of ovariectomy on the same day. the patients living within a short distance of each other.

It is an interesting fact with regard to the history of ovariectomy in this country that Dr. John L. Atlee's first operation, performed in 1843, was also the first operation in which both ovaries were removed. In the report of this remarkable case, an unusually elaborate one, in the *American Journal of the Medical*

Science, for January, 1844, after instituting a comparison between this and other capital operations, Dr. Atlee makes a strong appeal in favor of ovariectomy. "Let this operation," he says, "but be placed upon its legitimate basis, and let it receive that attention from the profession which has been devoted to other departments of surgery, and we shall soon arrive at such a knowledge of the proper time and manner of operating, and before those complications exist which render it impracticable, as will be the means of saving many unfortunate and hopeless victims." When this operation was performed Dr. Atlee was not aware of the cases that had occurred in England in the practice of Dr. Clay and Mr. Walne, and he informs me that he would never have performed it if he had not studied with great care the report of McDowell's cases. The success of his operation, one of the most brilliant on record, induced him and his brother to repeat it on the first favorable opportunity, despite the opposition and clamor of their professional brethren. Up to 1850 only eighteen American surgeons, including the originator, had performed this operation. In 1855 it received a new impulse from the publication of Dr. Washington L. Atlee's first thirty-five cases, and in the following year appeared the admirable prize essay of Dr. George H. Lyman, of Boston, entitled "The History and Statistics of Ovariectomy," embracing a summary of three hundred cases, being all that there were then known as having occurred in different parts of the world. On the continent of Europe ovariectomy made, until recently, very slow progress, although Chrysmar, of Germany, had performed it three times before the close of 1820, and consequently several years before it was attempted by Lizars, of Edinburgh. In France it was performed for the first time in 1847. In these countries, as in the United States and Great Britain, it was long denounced as an unsafe and improper operation, and that this should have been the case is not surprising when we consider the enormous mortality which attended it, even in the hands of many of the most accomplished surgeons. The results of late years, however, have been more encouraging, and have been particularly flattering in the hands of Koeberle, of Strasbourg, Shroeder, of Berlin, and Skoeldberg, of Sweden, not to mention others. Ovariectomy is no longer on trial; it has successfully passed that ordeal, and is now performed in every country of the earth where civilization has carried the blessings of scientific medicine.

The frequency of ovarian diseases is appalling; far greater, indeed than it is generally supposed to be. One surgeon alone, Dr. Clay, of England, declares that he had examined within a single decade eight hundred and fifty cases! Who, in view of these occur-

renees, will deny the blessings of ovariectomy, especially when we take into consideration the fact that few women laboring under maladies of this kind live longer than about four years, unless relieved by surgical interference?

The mortality of this operation is worthy of brief notice in connection with Dr. McDowell's name and fame. His own cases—thirteen in number, with eight cures, four deaths, and one failure to complete the operation on account of extensive adhesions, show an astonishing degree of success when we recollect all the circumstances attending them, especially the operator's own inexperience, and the absence of any rules to guide him in his undertakings. For a number of years after McDowell's death the mortality in the hands of different surgeons exhibited but little improvement upon that in his own practice. Thus, of one thousand four hundred and eight cases collected by me in 1871, from various sources, native and foreign, four hundred and fifteen died, affording a mortality of twenty-four per cent., or one death in every three and two fifth cases. That the results of the operation are materially influenced by the manner in which it is performed, and by the previous and subsequent treatment, is a fact long since fully established. Thus, if we take the statistics of one hundred cases in the hands of so many different surgeons, men who have no experience in such cases and who follow the ordinary method of operating, the mortality will be found to be enormous, just as it would be likely to be under similar circumstances in any other grave operation, as lithotomy, the larger amputations, trephining of the skull, and the ligation of the larger arteries. No one will deny that experience is a most important factor in saving or destroying life in all the more serious, severe, or capital operations. The results of ovariectomy in the hands of professed or skilled ovariectomists, men who make a specialty of abdominal surgery, are among the greatest triumphs of our art, entitling them to be ranked among the noblest benefactors of the present day, or indeed of any day. The cases of Washington L. Atlee, Charles Clay, T. Spencer Wells, Thomas Keith, Gilman Kimball, Alexander Dunlap, T. Gaillard Thomas, and others, are counted, not by tens or twenties or thirties, but by hundreds. It is this enormous multiplication of cases that makes these men such experts and that gives them such superiority over those whose practice is comparatively limited. One of the most gratifying circumstances connected with this operation is the gradually decreasing mortality, even in the hands of the most successful surgeons. This is strikingly shown, to go no farther, by the statistics of Dr. Clay, of Manchester, who, as previously stated, introduced ovariectomy in England. On the first twenty cases the death-

rate was one in two and one half; of the second twenty, one in three and one-third; and of the last thirty-one, one in four. In Mr. Wells's cases the same gratifying results are apparent, and so also is those of Mr. Keith, of Edinburgh. Who will dare to assert that these triumphs are not due to superior skill in operating, and to increased care and experience, and not to the selection of the cases, although this will doubtless, now that the diagnosis between innocent and benign ovarian diseases is so well established, have its influence?

The attention bestowed upon the after-treatment must necessarily exert a powerful influence upon the patient's fate. All the professed ovariectomists employ trained and experienced nurses and personally superintend their cases from first to last. Mr. Keith, in referring to this subject, says, "No one knows the anxiety that ovariectomy has given me, nor the time and thought and care I have bestowed on the patients." There can be no doubt that the chances of recovery after the operation are greater when the patient is treated in a private hospital, situated upon airy ground, and provided with all the means and appliances which such an institution ought to possess. This fact has been strikingly exemplified in the practice of Mr. Keith and also in that of Mr. Wells while he was in charge of the Samaritan Hospital, London.

Leaving out of the question the results of less experienced ovariectomists, what can be more wonderful than the results of Mr. Keith's cases, two hundred and eighty-four, with a mortality of only thirty-five, or one death in about eight operations. Of the last 158 cases only twelve succumbed, of the last seventy-seven only thirteen, and of the last forty-nine not one, thus verifying his assertion that "this long-despised operation is now the safest of all the great surgical operations, at least judging from these results." The statistics of the operations of Mr. Wells are equally astonishing. Both these surgeons are now making constant use of antiseptics, notwithstanding they obtained most brilliant results from the ordinary treatment, conducted with that care which their increasing experience had taught them to employ. Mr. Keith does not hesitate to ascribe much of his wonderful success in his late cases to the efficacy of antiseptics. Mr. Wells, in the letter previously referred to, says: "I began the year 1878 with the eight hundred and eighty-eighth case, by adopting the antiseptic system of Lister, and have kept it up ever since, the result of forty-five cases being forty recoveries and five deaths. The recoveries have taken place, as a rule, without fever." "I believe," he adds, "that the antiseptic system will certainly reduce mortality and expedite convalescence." Of the thirty-eight cases of the ninth hundred,

the number operated upon by Mr. Wells up to April 29, five, he informs me, have died, and thirty-three are well or convalescing. Of Mr. Clay's two hundred and seventy-six cases two hundred recovered and seventy-six died. Koerberle, during the last four years, operated one hundred times with eleven deaths.

The mortality in Dr. Washington L. Atlee's three hundred and eighty-seven cases was, as I am informed by his son-in-law, Dr. Thomas M. Drysdale, about thirty per cent., which, considering that he did not select his cases, and frequently had no opportunity of superintending the after-treatment, always a matter of great moment in every severe operation, may be regarded as a fair average. Dr. John L. Atlee's fifty-seven cases show forty recoveries and twelve deaths, with five failures to complete the operation on account of extensive adhesions. Of Dr. Dunlap's one hundred and forty-three patients one hundred and twelve recovered and thirty-one died. Of Dr. Peaslee's seventy-seven operations the results of twenty-eight only are positively known, and of these nineteen recovered and nine perished. J. Taylor Bradford had thirty cases with three deaths. Professor T. Gailiard Thomas's one hundred and twenty-nine show ninety-six recoveries and thirty-three deaths. The mortality of Dr. Kimball's cases is in the ratio of one to four: of his last twenty-four cases twenty-one have recovered and three have died.

It would be foreign to my purpose, in an address like this, and especially before such an audience, to speak of the causes which mainly influence the results of this operation; but there is one circumstance to which I can not forbear alluding. I refer to the importance of establishing in every case, before an operation is attempted, a correct diagnosis. Fortunately this can now be done, with proper care, almost in every instance, and with the aid of the microscope. Dr. Thomas M. Drysdale, availing himself of the great opportunities afforded by Mr. Atlee's operations, has, after numerous examinations, satisfied himself of the existence, in all innocent forms of ovarian cysts, of what he calls the "ovarian granule cells." These cells, which are very small and of a rounded or oval shape, are largely supplied with nuclei and nucleoli, and, as they are not present in any other affections or in dropsical fluids, they may be regarded as characteristic. More recently Dr. Foulis, of Edinburgh, and Dr. Knowsley Thornton, of London, have ascertained that malignant ovarian tumors can be distinguished from benign ovarian growths by the presence of groups of large, pear-shaped, round, or oval cells, occupied by granular material with nuclei, nucleoli, vacuoles, or transparent globules. The value of these researches, in which Dr. Drysdale has taken the lead, can

not, in a diagnostic point of view, be overestimated, for they clearly indicate the necessity, in every case of doubt, of making a thorough examination of the contents of these classes of tumors before finally deciding upon the propriety of using the knife.

The brilliant success which has attended ovariectomy both in America and in Europe has led to an extension of the whole domain of abdominal surgery, and has emboldened operators to invade other regions of the body until recently regarded as too sacred to be meddled with. Indeed, there would seem to be hardly any longer any forbidden territory. The uterus, the spleen, and the kidneys have of late years been the coveted objects of the surgeon's cupidity. Very lately the gall-bladder has not only been aspirated for the purpose of relieving it of distending fluids, but actually, in several instances, extirpated. Many years ago, during my residence in Kentucky, I received a telegram from a distinguished surgeon of Columbus, Ohio, saying he had just excised the liver, and that as his patient was progressing favorably he indulged great hope of her recovery. The woman, however, died the next morning, when it was discovered that, instead of the liver, only an ovary had been removed, thus depriving my friend of the glory of being a pioneer in hepatic surgery! Within the last ten years a number of cases of excision of the larynx have been reported, including, in some instances, portions of the tongue and of the esophagus, and yet despite the mutilation some of the survivors, with the aid of an artificial substitute, articulate nearly as well, it would seem, as before the operation. The entire tongue, too, has on a number of occasions, perhaps in not less than forty or fifty cases, been extirpated with, as is alleged, very little impairment of the patient's voice or power of speech. With such inroads, such innovations, on the part of surgery, we need not be surprised if, on waking some morning, we should find the papers filled with accounts of the successful amputation of the head without any serious detriment to the patient's mental faculties, despite the assertion of Mons. Blandin, a French surgeon, that this portion of the body, which he invariably designates as the *encephalic extremity*, "can not be removed during life without stopping respiration and causing other inconveniences which, unhappily, render the operation inadmissible!" This language, however, it must not be forgotten, was uttered fifty years ago, when surgery was in a comparatively crude condition, and is therefore hardly applicable at the present day. But pleasantry aside, as perhaps unbecoming the occasion, while I have always been a friend to progress it is evident that there must be limits to the use of the knife. What the fate of some of these

operations may be, whether any or all of them will be ultimately admitted into the domain of legitimate surgery, must for the present remain an open question. We are no more justified now in condemning what may seem to us to be an improper operation than physicians were in the days of McDowell in condemning ovariectomy. Experience alone can determine how far the knife shall go or shall not go.

What has been called, perhaps oddly enough, normal ovariectomy, an operation first performed by Dr. Robert Battey, of Georgia, may be regarded as a natural outgrowth of McDowell's operation, or ordinary ovariectomy, rendered necessary, as is alleged, on account of organic or functional disorder of the ovaries, incurable by ordinary treatment. The results obtained thus far are not very satisfactory, and it is evident that further light is required before we can determine its real merits. Different methods of reaching the faulty structures have been suggested, but there is not one that is wholly free from danger, while that originally practiced by the courageous and ingenious inventor does not always afford sufficient space for the purpose.

The statistics of this operation published in 1878 by Dr. George J. Englemann, of St. Louis, embracing forty-three cases, show that the risk is very considerably greater than in ordinary ovariectomy, fourteen of the cases terminating fatally, while of the twenty-nine surviving patients nine only, or thirty-one per cent, were cured, and eleven were more or less improved. Many of the operations were not completed on account of the impossibility of extracting the entire ovary.

Dr. Battey, as he informed me only a few days ago, has performed this operation fifteen times with two deaths and thirteen recoveries. Of these thirteen cases four were promptly and entirely cured, nine were benefitted, and of those not completely relieved every one had made notable progress during the last twelve months.

In delineating the character of McDowell the question naturally arises, how was he led to perform, for the first time in the history of surgery, so dangerous an operation? Was it his superior knowledge of abdominal and pelvic diseases, or had he made a special study of them, and thus qualified himself above all other men to become a pioneer in a branch of surgery whose territory had never before been invaded by the knife? Or was it his superior sagacity or his more profound penetration which led him to undertake it? Finally, had the lessons which as a student he imbibed in the lecture-room during his sojourn at Edinburgh any agency in the matter? It must not be forgotten, in discussing this subject, that long before McDowell launched into this then unexplored field of surgery a number of distinguished physicians, in view

of the hopeless character of ovarian diseases, suggested their removal through an opening in the wall of the abdomen. Among others who seriously thought of the matter may be mentioned more especially the names of Schlenker, Willius, Preger, Chambon, and the celebrated William Hunter, the foremost obstetrician of his day in Great Britain. None of these men, however, had the courage to undertake such an operation. Prior to McDowell no surgeon had been so bold as to do more than to open occasionally an ovarian cyst and to let out its contents. No one dared to remove an ovarian tumor of any kind bodily.

In reflecting upon this subject I have always thought that the instruction which McDowell had received while attending the lectures of the celebrated Mr. John Bell, of Edinburgh, had mainly paved the way to this undertaking. It is a well-known fact that the young Kentuckian was greatly impressed by the lectures of this great surgeon, who was a man of splendid genius, of high intellectual endowments, an eloquent teacher, and a bold, dashing operator, then in the zenith of his renown. We may well imagine with what pathos such a man, a man of the most ardent temperament and a most accomplished scholar, would describe abdominal surgery, and with what force and emphasis he would dwell upon the hopeless character of ovarian tumors. No man perhaps ever taught surgery to more admiring pupils, or more completely fascinated them by the power of his eloquence. There was, moreover, from all accounts a wonderful magnetism about John Bell, which drew to him, as with an irresistible charm, every one who came within his presence. Listening to the lectures of such an enthusiast, a kind of Tom Marshall in his way, it is not probable that the young American sat listlessly with closed eyes and ears upon the hard bench of the amphitheater. On the contrary his attention was all agog. We can see him even now, as it were, with open mouth and protruding head, with his chin resting upon his hands, eagerly drinking in every word as it fell from the lips of this divine son of Aesculapius. The sparks of genius which such a teacher emits kindle a flame in the minds of his pupils which the waters of all the rivers and seas of the earth cannot extinguish. That the predilections of this wonderful man exerted a powerful influence in moulding the character of McDowell and in inspiring him with boldness and confidence as an operator is unquestionable. How far they affected his career as an ovariectomist is of course a mere matter of conjecture. The knowledge which he brought home with him, and his warm sympathy for suffering woman, no doubt exercised a powerful effect upon his future life. Besides, he was not unaware of the fact that success had often attended the Cesarean section, and that

persons not unfrequently recovered after severe wounds and other injuries of the abdominal and pelvic viscera. Moreover, it is not improbable that, in reflecting upon the subject, he came to the conclusion, long since universally recognized, that the peritoneum, when chronically diseased, is generally comparatively tolerant of the rudest manipulation, whereas the slightest exposure of, or interference with, the healthy membrane is sure to be promptly resented, almost invariably, indeed, at the expense of the patient's life. Finally, it must not be forgotten that McDowell was a bold surgeon, and a man of a broad, elevated mind, capable of taking a comprehensive view of anything that was presented to him. With a heart as tender and gentle as that of a woman, he was not afraid of the sight of blood. For many years he had had the field of surgery in Kentucky almost wholly in his own hands. He had not been home long from his foreign residence before patients began to flock to him from all parts of the Southwest, and he found himself immersed in a large surgical practice demanding the performance not only of the more common but also of many of the more difficult and severe operations. His first case of ovariectomy occurred when he had hardly been twelve years engaged in the practice of his profession. He was about the same age as Valentine Mott when he performed his great feat of tying for the first time the innominate artery; an operation which in comparison with that of McDowell is of utter insignificance, for of the nineteen or twenty cases in which it has been done only one life has been saved, whereas the other has already restored to health and comfort upwards of two thousand women.

The career of McDowell is so intimately bound up in the great operation already so frequently mentioned that one might suppose nothing of interest remained to be considered. This, however, is far from being the case. In many respects, indeed, it is replete with incidents. Born in Rockbridge County, Virginia, in 1771, he was brought, when hardly two years old, by his parents to Danville, at a time when Kentucky was literally a wilderness, resounding with the howl of the panther and of the savage, and reeking with blood of its early settlers. The terrible battle fought near Blue Lick Springs, in which Daniel Boone played so conspicuous a part and lost a son, and which proved to be so disastrous to his followers and companions in arms, took place only a short time after this advent, and filled the country with pain and sorrow. The frequent wars of which it was the theater gave it a peculiar claim to the title of the "Dark and Bloody Ground," from which it derived its name. At the period in question Kentucky was still a territory, and it was not until after repeated conventions, the last of which was

held in this city, that it was finally, in June, 1792, admitted as a state into the Union.

McDowell was of Scotch-Irish parentage, and the ninth of twelve children. His great-grandfather, after whom he was named, was Ephraim McDowell, a brave and courageous man, who, after having done some fighting in the civil wars of Ireland, in the cause of the Covenanters, emigrated, after he was past middle life, to Pennsylvania, which he left in 1737 for Augusta County, Virginia, where he died at a very advanced age shortly before the revolutionary war. From an elaborate genealogical article in the *Cincinnati Commercial*, January 14, 1879, under the *nom de plume* of Keith, it appears that the descendants of the Scotch-Irish emigrant have become almost as numerous as the sands of the sea-shore, and that they represent by their intermarriages many of the most respectable and influential families in Maryland, Virginia, Kentucky, Ohio, Illinois, Indiana, Missouri, and indeed almost in the entire Southwest. If called together they would form, at least numerically, a powerful clan. Besides the great surgeon, who has immortalized the family, many of these people have held important positions, as governors of different states, congressmen, lawyers, judges, divines, physicians, politicians, and army officers. Joseph Nash McDowell, who died only a few years ago, was a nephew of Ephraim, a great teacher of anatomy and surgery, and the founder of a medical school at St. Louis. Another nephew, the late Dr. William A. McDowell, of Louisville, occupied a high position as a sagacious and successful physician. The name of Gen. Irvine McDowell, United States Army, is familiar to every American citizen. The father of Ephraim was Samuel McDowell, an accomplished gentleman, a member of the Legislature of Virginia, and, after his removal to Danville, a judge of the district court, a position which he held until within a short time of his death. On the mother's side he was descended from the McClungs, a distinguished family of Virginia. The son's early education was obtained at a classical seminary at Georgetown, in his adopted state, under the supervision of Messrs. Worley and James, two accomplished teachers. How long he remained here, or what progress he made in his studies, I am unable to say, but it is safe to affirm that, although he was fond in after life of literary reading, his primary education was sadly neglected, and that he never surmounted his early deficiencies. He wrote, as has already been stated, with great difficulty,* and his only literary contributions are two short articles contained in the *Philadelphia Medical Repertory*

*The facsimile letter of McDowell published herewith largely for this purpose, and the history of his education, his life and what he accomplished, all show that his lack of literary attainments have been greatly exaggerated.]

and *Analytical Review* for 1817 and 1819. His medical education was commenced in the office of an eminent physician, Dr. Humphreys, of Staunton, Virginia, a graduate of the University of Edinburgh. It was doubtless through the influence of his preceptor that the youth determined to go at once to the fountain-head of medical education and learning, as the Scotch metropolis was then very justly regarded. At all events there is no proof to show that he ever attended any lectures in Philadelphia, at that time the only place of resort for the medical student in this country. The University of Edinburgh, of which he was a member in 1793-4, enjoyed a world-wide reputation at this period on account of the learning and ability of its professors, among whom may be mentioned as especially worthy of notice the names of Cullen and Black, two great luminaries, whose fame added luster to the school and attracted pupils from all parts of the civilized world. Not waiting to take a degree, he immediately, upon his return to America, settled at Danville, where, having brought with him the prestige of foreign study, he soon acquired the confidence of the public and rapidly rose to distinction as a surgeon and as an expert operator, a position of which he retained undisputed possession until the organization, in 1819, of the medical school at Lexington, when he was gradually eclipsed by his young rival, Dr. Benjamin Winslow Dudley, a gentleman of highly fascinating manners, a popular teacher, and, as all the world knows, a great surgeon.

It is not the design of this address to enter into minute details respecting Dr. McDowell's more ordinary surgical achievements. It will subserve my purpose to state that he was an excellent lithotomist, and that he repeatedly performed many of the great operations of surgery. The subject of one of these operations was James K. Polk, afterward President of the United States, at the time a thin, emaciated stripling, fourteen years of age, worn out by disease, uneducated, and without apparent promise of future usefulness or distinction. "As an operator," as Dr. Alban G. Smith, who late in life changed his name to Dr. Goldsmith, and who knew him well, having at one time been his partner, told me, "as an operator he was the best I ever saw in all cases in which he had a rule to guide him;" no slight praise from a man who was himself an expert operator; and yet Dr. Goldsmith seemed to forget that this man did certainly once operate in a case in which he had no rule to guide him, a case which was destined to confer immortality upon his name.

McDowell was not only a good operator, but he possessed all the higher attributes which make up the character of a great surgeon, in tense consciousness and a scrupulous regard for the welfare of his patients. He never op-

erated merely for the sake of operating. He had always an eye to consequences. For the mere mechanical surgeon he had an unmitigated contempt. In speaking of ovariotomy, in answer to some strictures pronounced upon his first three cases, he expressed the hope that no such surgeon will ever attempt it. "It is," he adds, "my most ardent wish that this operation may remain to the mechanical surgeon for ever incomprehensible." He considered the profession of medicine as a high and holy office, and physicians as ministering angels, whose duty it is to relieve human suffering and to glorify God. He had a warm and loving heart, in full sympathy with the world around him. To the poor sick he was particularly kind. He was a loyal and devoted husband, a tender and loving father, an honest, high-toned citizen. In all the relations of life he was a model. Naturally of a lively, social disposition, he enjoyed a good joke or a spicy anecdote, and was the delight of every social entertainment which he honored with his presence. Late in life he devoted much of his leisure to reading and meditation. His favorite medical authors were Sydenham and Cullen; his favorite literary authors, Burns and Scott. During his sojourn in Scotland he passed several months of his vacation in rambling over the country trying to make himself familiar with the nature and habits of the peasantry. In these perambulations he had the society of two of his Kentucky friends, Drs. Brown and Speed, the former of whom became afterward Professor of Medicine in Transylvania University. When the trio reached home someone asked Brown, "What do you think of McDowell?" "Think of him? Why he went abroad as a gosling and has come back a goose." It would be well if our country had more of such birds! He had little confidence in the efficacy of medicine, and constantly cautioned his students against the too free use of drugs, saying that they were more of a curse than a blessing. He considered surgery as the most certain branch of healing art, and spared no means to extend his knowledge of it. He was an excellent anatomist, and it is said that he never performed any serious operations without previously recalling to his mind the structures involved in it. In 1807 the Medical Society of Philadelphia sent him its diploma of membership, and in 1823 the University of Maryland conferred on him the degree of Doctor of Medicine. At the age of thirty-one he married Sallie, daughter of Governor Isaac Shelby, of Kentucky, by whom he had six children, two sons and four daughters, two of the latter of whom, Mrs. Deadrick, of Tennessee, and Mrs. Anderson, of Paris, Missouri, are still living at an advanced age, the parents of large and highly respectable families. He was nearly six feet in height, with a florid complexion, black eyes,

a commanding presence and remarkable muscular powers. As an illustration of his great physical strength, he used to tell with peculiar glee an anecdote of a circumstance which occurred while he attended medical lectures at Edinburgh. One day, as the story goes, a celebrated Irish footracer, a kind of Mike Fink, arrived, boasting that he could outrun, outhop, and outjump any man in the city, and bantered the whole medical class. McDowell was selected as their champion, the distance being sixty feet, the stake ten guineas. The backwoodsman purposely allowed himself to be beaten. A second race for one hundred guineas, at an increased distance, came off soon afterward, and this time the Irishman, after much bullying, was badly worsted, much to his own chagrin and the delight of the students.

Although McDowell's means were not large he was liberal in the bestowal of his charities, and generous to a fault in his dealings with his patients. In 1828, only two years before his death, he united himself with the Episcopal Church, of which he remained a zealous and consistent member. A vein of piety ran through his whole life. As a proof of this fact it may be stated that he always preferred to perform any great operation that he might have on hand on the Sabbath, knowing, as he affirmed, that he would then have the prayers of the Church with him. Trinity Church of Danville was the special object of his care; and as an evidence of the interest he felt in it I may mention, what does not seem to be generally known even among your own citizens, that he gave it the lot upon which the present building is situated. Indeed McDowell, to use the language of one of your most noble and accomplished women, was the head and front of its van-guard, which embraced many distinguished names in the past history of this portion of Kentucky. Of Center College he was one of the founders and original trustees.

Such, fellow-citizens of Kentucky, was the character of Ephraim McDowell: kind-hearted, benevolent, and just in all his dealings, an excellent citizen, an original thinker, a bold, fearless, but most judicious surgeon, and above all, a Christian gentleman. Such, citizens of Danville, was your former townsman, whose career has shed so much luster upon his age and country, and who, if he could be in our midst this day, might justly echo the words of the Roman poet, "*Eregi monumentum aere perennius.*"

The latter years of this good man's life were clouded by an attempt made, strange as it may appear, by one of his own nephews and private pupils, to deprive him of his claims as the originator of the operation so frequently mentioned. This circumstance induced him, in 1826, only a few years before his death, to address a printed circular to the physicians

and surgeons of the West in vindication of his rights. Without entering into any particulars respecting this matter, I am satisfied, from a careful examination of all the facts connected with it, that the pretensions set up by this gentleman, were, like the "baseless fabrie of a vision," without the slightest foundation in truth.

It was not given to McDowell to see the fruit of his labors beyond the limits of his own country; the seed which he sowed fell upon meagre soil, and was slow in germinating. Now and then, it is true, a blossom shot forth and shed its fragrance upon the air, but fully a quarter of a century elapsed before it ripened into vigorous fruit. No single age has ever witnessed the birth and the maturity of any branch of human knowledge. McDowell lived in advance of his time and of his profession; his boldness, as his contemporaries were inclined to view his conduct, took them by surprise, and shocked their sensibilities; hence, instead of investigating the merits of his operation, as reasonable men should and would have done, they rejected it as the device of a crack-brained man, who deserved to be prosecuted for violation of the sixth commandment. It was unfortunate for McDowell that he lived at a time when there were no societies for the diffusion of knowledge, and when the means of communicating intelligence were so scanty as they were in the early part of the present century. News at that period of our history, looked up as it always was in the mailbags of the cumbersome four-wheeled stage-coach, was often stale before it reached its destination. In those days, as well as for a long time afterward, there were no railroads, no steamships, no telegraphs. The world moved at a snail-like pace, or, as it were upon the back of a tortoise, at the rate of six or eight miles an hour. To publish reports of medical cases or of surgical operations was then, as it is now, unprofessional. Besides, even if such a course had been permissible they would have found their way very tardily to the public. Journalism was at a low ebb; there were comparatively few newspapers, and newspaper reporters had no existence. Medical news traveled still more slowly than miscellaneous. In 1817, when McDowell's first three cases were reported in the *Philadelphia Medical Repertory* and *Analytical Review*, there was, if I mistake not, only one other medical periodical in the United States. Had McDowell's operation been performed in our day the news would have spread far and wide within the first twenty-four hours, and in an almost incredibly short time would have been carried to the utmost limits of civilization. As it was, it was locked up first for eight years in the brain of its originator, and then in an obscure medical journal, and when at length it reached the

other side of the Atlantic it met only with ridicule and incredulity.

An account of McDowell's first three cases was, it seems, sent to Dr. Physick, of Philadelphia, but from some cause or other it failed to interest him or to attract his attention. He probably knew little or nothing of the backwoods surgeon, and therefore, it may be, looked upon him as an adventurer unworthy of notice. However this may be, it fared much better in the hands of Dr. James, the amiable Professor of Midwifery in the University of Pennsylvania. This gentleman, deeply impressed with the novelty and importance of the subject, and thoroughly acquainted with the hopeless character of the ordinary treatment of ovarian diseases, read an account of the cases before his class, and caused it shortly after to be published in the journal, already several times referred to, and of which, in fact, he was one of the editors. He, however, failed to make any editorial comments upon the subject, or to defend the operation when assailed by ignorant critics. McDowell also sent an abstract of his cases to his old master, Mr. John Bell, but as this gentleman had been for some time absent on the Continent, and not long afterward died at Rome, it never reached him. The paper, however, fell into the hands of one of his pupils, Mr. John Lizars, of Edinburgh, by whom it was published in the *Edinburgh Medical and Surgical Journal* for 1824. Mr. Lizars, as before stated, was the first to perform McDowell's operation in Great Britain.

In no pursuit of life does history repeat itself more frequently than in affairs relating to human progress, innovation, and discovery. From this occurrence our profession is not exempt. The history of the discovery of the circulation of the blood, one of the most brilliant achievements of the human intellect in the seventeenth century, is a striking instance in point. Of Harvey's contemporaries not one, it is said, over forty years of age accepted his teachings. Many years elapsed before the value of vaccination was fully recognized, and even now an operation which has saved millions of lives has its opponents not alone among the vulgar, but among otherwise highly enlightened people. The use of the stethoscope as a means of diagnosis was long rejected by medical men, and the speculum, an instrument as old as Heracleum, reintroduced to the notice of the profession less than fifty years ago by Recamier, of Paris, met with no better fate. Everybody knows with what suspicion many physicians regarded the employment of anesthetics, and it is fair to say that much prejudice in regard to the use of this class of remedies still lingers in the public mind. Ignorance, superstition, and prejudice have ever been giants in the path of progress.

The idea of erecting a monument to the memory of Dr. McDowell originated with one of the citizens of Danville, the late lamented Dr. John D. Jackson, a gentleman whose death, a few years ago, in the prime of life, threw a whole community into mourning, and whose memory will long be cherished on account of his varied accomplishments as a physician, his lovable character as a man, and the many amiable impulses of his great heart. This idea was in due time communicated to the Kentucky State Medical Society, of which Dr. Jackson was a prominent member, and acted upon through a committee whose duty it became to collect the necessary funds for carrying out the noble design. This committee made known its wishes not only to the profession of this country, but to our brethren in Europe, and also, if I mistake not, to the women who had been the fortunate recipients of the fruits of Dr. McDowell's operation. Finally in 1875, a stirring appeal was made to the American Medical Association at its annual meeting at Louisville in May of that year. From no one of these sources, however, was any substantial aid derived, and it devolved at last upon the society in which the design originated to furnish nearly the entire sum necessary to carry it into execution.*

While, therefore, the granite shaft which graces yonder cemetery is a just tribute to the memory of a great and good man, whose title to immortality is well founded, let us not forget the part borne in its erection by the Kentucky Medical Society, which had the sagacity to perceive, and the liberality to execute, a design which reflects so much credit upon the medical profession and the State of Kentucky. I feel a just pride when I recall the fact that I was one of the founders of a Society which now includes among its members nearly all the medical talent, culture, and refinement of the State, and which has established a reputation for ability, learning, and enterprise not exceeded by any similar association in the United States. Dr. McDowell is not the only physician of whom Kentucky has reason to be proud. She furnished the first case of hip-joint amputation on this continent in the hands of Dr. Walter Brashear, of Bardstown, of lithotomy in the practice of Dr. Alban G. Smith, of Danville, and the most flattering results in ovariectomy

*All, in fact, that the American Medical Association did was to pass an empty resolution, leaving, as the illustrious chairman, Dr. J. Marion Sims, expressed it, "to Kentucky the grateful privilege of providing a local monument to the memory of Dr. McDowell," and requesting the Association to contribute through its individual members the sum of ten thousand dollars as a fund, to be called the "McDowell Memorial Fund," to be devoted to the payment of prizes for the best essays relating to the diseases and surgery of the ovaries. This fund is still unborn, and it is not probable that it will receive any further attention from the Association.

in the hands of Dr. J. Taylor Bradford, of Augusta. The triumphs of Dr. Benjamin W. Dudley in lithotomy established for him an unrivaled reputation in his day as a great operator in calculus affections. Her medical teachers were for a long time, as they still are, among the foremost in the land, and it is but just to say that her practitioners have no where any superiors. Kentucky was the first State west of the Alleghany Mountains to establish a medical school and to send forth its first medical graduate in the West. If in statesmanship she may boast of a Clay and of a "silver-tongued" Crittenden, whose eloquence enchanted admiring audiences, and elicited the applause of the senate chamber; if her bar was long known as one of the most elegant, austere, and learned in the land; if her pulpit was dignified by the piety, erudition, and oratory of her Campbells and her Breckinridges, and is still adorned by her Humphreys, her Robinsons, and other great divines, she has their counterparts in her Caldwell, her Drake, her Dudley, her Miller, her Rogers, her Yandell, her Bush, and other great physicians whose names stand high upon the roll of fame, and who, if they had directed their attention to other pursuits, would have been equally distinguished. These men need no monuments to perpetuate their virtues or their services; their names live in the esteem and affection of their fellow-citizens, engraved in good acts, designed to relieve human suffering, and to exalt the dignity of human nature.

I stop here for a moment to ask, what is the object of a monument? Is it to glorify the dead or to encourage the living? The boy, as he passes along Charles Street, Baltimore, under the shadow of the Washington Monument, pauses to read the inscription upon its entablature: "Erected by the State of Maryland in grateful recognition of the virtues and services of the 'Father of his Country'." He gazes at the august figure at the top, and discerns in it all the attributes of a great man: he goes home and curiosity impels him to inquire into his character; perhaps he consults his childish history, and there finds that Washington, the grandest subject of all history, was the saviour of his country: like himself, at one time, an obscure youth, but now, long after his death, the idol of the American people. He has learned an important lesson: his ambition is roused; his energies have received a new impulse; in a word, new life has been infused into his soul, and that boy is already the coming man. The granite shaft which we have this day dedicated to the memory of McDowell is a living biography, designed not merely to commemorate the virtues and services of a great and good man, but to excite the emulation of Kentucky's youths, and to urge them on to deeds of valor and of hu-

manity. A country without monuments is a country without civilization.

I can not forbear introducing here the appropriate and beautiful remarks of an old and distinguished pupil, Dr. David W. Yandell, made upon a recent festive occasion, when contrasting the fame of the statesman, the orators, and the military men of Kentucky with that of McDowell. "Chief among all of these," says my eloquent friend, "is he who bears the mark of our guild, Ephraim McDowell; for the labors of the statesman will give way to the pitiless logic of events, the voice of the orator grow fainter in the coming ages, and the deeds of the soldier eventually find place only in the library of the student of military campaigns, while the achievements of the village surgeon, like the widening waves of the inviolate sea, shall reach the uttermost shores of time, hailed by all civilization as having lessened the suffering and lengthened the span of human life."

In selecting Danville for the site of the "McDowell Monument," the Kentucky State Medical Society made a happy choice, for it was here that the Father of Ovariotomy encountered and vanquished his early professional struggles; here that he performed his great achievements; here that at the close of a well-spent life he was laid quietly in the grave. When McDowell, after his return from Europe, began the practice of medicine here, Danville contained a mere handful of inhabitants: but he soon identified himself with its prosperity, watching its progress with a jealous eye, and contributing largely by his means and his good sense to make it what it now emphatically is, the Athens of the West, a distinction at one time so justly conceded to her neighbor, Lexington. Its institutions of learning have become the foremost in the State. Center College has educated many of Kentucky's greatest citizens. Its theological school has widely disseminated the lessons of Christianity. Its female seminaries have planted the seeds of virtue, piety, and learning in the hearts and minds of her young women. The institution for the education of deaf-mutes was the first of the kind established in the West. Founded in 1823, shortly after those of Hartford, Philadelphia, and New York, it gradually, despite great obstacles, attained under the wise management and fostering care of the late Mr. John A. Jacobs, extending over a period of forty-four years, a degree of reputation not less creditable to the country at large than to his adopted State. His death in 1869 was a public loss, widely deplored.

Nearly forty years have elapsed since I was called to the chair of surgery in the University of Louisville, and responded, along with Professor Drake, at the request of my colleagues, to an invitation issued by the late Dr.

William L. Sutton, of Georgetown, to assist in forming a State medical society. The first attempt proved abortive, but another, made under more favorable auspices several years later, was successful, and the society soon assumed important proportions. Of the original members, of whom Dr. Sutton was one of the most zealous and influential, few survive; but it is gratifying to know that the work which they inaugurated has been so nobly pushed forward by their successors, not a few of whom have achieved a wide and endearing reputation as medical philosophers, clear thinkers, accurate observers, and accomplished and sagacious practitioners. If any evidence were needed of their zeal to advance the interests of medical science and of suffering humanity, it would be found, not in idle talk or vapid boasting, but in hard work and steady and persistent effort, as shown in the transactions of their society and in our periodical literature. Progress of the most laudable character is everywhere visible in its ranks. Since the period adverted to, most of my earlier Kentucky friends in and out of the profession have passed away, while of my earlier colleagues in the University of Louisville not one remains. Drake and Caldwell and Short and Cobb and Miller and the Elder Yandell have gone to their last home, to that sleep which knows no waking. Palmer and Rogers, who entered the school at a later day, have also been gathered to their fathers; the one a brilliant anatomical teacher and a genial and intelligent companion; the other for upward of a third of a century Louisville's honored, beloved, and favorite physician, with a heart gentle as a woman's and a countenance benignant as an angel's. Kentucky has a long list of deceased physicians, who have left behind them a rich legacy and an example worthy of the emulation of their successors, whose duty it should be to cherish their memories and to transmit to their descendants the history of their lives.

It would be unjust alike to the occasion as it would be to my own feelings if I failed to connect with each other and with the great ovariologist, as with an adamant chain, the names of those of our surgeons, already several times mentioned, who have been instrumental in reviving this operation in this country, and thus giving it a new impulse. The names which stand most conspicuously upon this honored list are those of the two brothers Atlee, John and Washington, J. Taylor Bradford, Edmund Randolph Peaslee, Gilman Kimball, and Alexander Dunlap. Of these six pioneers in this field of surgery, three have passed away, while the other three, John L. Atlee, Gilman Kimball and Alexander Dunlap, are still spared to us, in a ripe but vigorous old age, to battle with disease

and death and to earn additional laurels for themselves and their country.

Of the early life of Dr. J. Taylor Bradford, who died a number of years ago in the prime and vigor of life, I know nothing, although our acquaintance extended over a period of twenty years. He received his medical degree from the University of Louisville during the early part of my connection with that institution, and, settling at Augusta immediately afterward, soon acquired a large and commanding practice, performing many important surgical operations, and earning an enviable reputation as a most successful ovariologist. Had he reached the age usually allotted to man his cases would probably have been counted by the hundred.

Dr. Washington L. Atlee, who died at his home in Philadelphia in September, 1878, was, as is his brother John, a native of Lancaster, Pennsylvania, where he was born in February, 1808. After having received an academic education he graduated at the Jefferson Medical College in 1829. Having been fellow-students in the office of Professor George McClellan, the eminent surgeon, and having met with him very frequently after my removal to Philadelphia in 1856, I had excellent opportunities of forming a correct estimate of his character, which no one perhaps appreciates more fully than myself. If his character was not perfect in the true sense of that term it was a model worthy of universal imitation. He had many striking traits of character, with a strong, vigorous mind increased in a strong body, and accomplished a vast deal of work. He performed a much greater number of professional journeys than ever fell to the lot of any American physician. His visits extended into almost every State of the Union and even into a number of our Territories. His power of endurance was gigantic. He often traveled thousands of miles without taking any rest except such as he found upon the swiftly flying railway train. Not unfrequently he performed two ovariotomy operations on the same day. Such labor could not fail to make serious inroads upon the stoutest frame, and, although the day of reckoning was long put off, it was sure to come at length.

The early professional life of Atlee was spent in earnest practice, enlivened by the study of botany and other branches of natural science, for which he had a great fondness. Much of his leisure during the first few years was spent among the flowers and grasses of his native county. After his removal, in 1844, to Philadelphia he occupied for eight years the chair of chemistry in what was then known as the Pennsylvania Medical College. His career as an ovariologist began, as already stated, in 1844 and terminated only with his life. His first case proved fatal. As

an operator in his specialty he had no superior on this continent, if indeed anywhere. Despising display, always so well calculated to entrap the vulgar, he employed the fewest possible instruments and went about his work calmly and deliberately, with the greatest care for the welfare of his patient, which, it is safe to say, no man had ever more at heart. There was no hurry, no parade, no ostentation. I witnessed a number of his operations and was strongly impressed by the simplicity of his movements and the coolness of his manner. Such, in a few words was his character as an operator. But it must not be inferred that Dr. Atlee was a mere specialist. For many years he enjoyed a large and lucrative general practice, although during the last quarter of a century of his life his business was mainly in the direction of abdominal surgery, in which he achieved an enduring reputation. He wrote largely for the medical press, and late in life published an able and elaborate treatise on the "Diagnosis of Ovarian Tumors," a subject which he invested with new light. His operation for the removal of the fibroid growths of the uterus constitutes a new era in surgery, precious alike to science and to humanity. Like McDowell's operation, Atlee's was received with distrust, and remained unappreciated for upward of a quarter of a century. Time, however, which generally measures things according to their real value, has made a strong verdict in its favor, and it is therefore not surprising that the gynecologists of America and Europe should unite in proclaiming it as one of the greatest achievements of modern surgery. Atlee's own successes should have been quite sufficient to convince any unprejudiced mind of its great value.

Atlee had a strong but tender, sympathizing heart, a well-regulated temper, a high sense of honor, and a clear and well-cultivated mind. Tall and erect in person, he had a commanding presence, blended with the air and graces of the well-bred gentleman. In the sick-room he was cheerful and winning in his manners, with a heart full of kindly feeling for the sufferer. He was the idol of his family, a warm friend, a loyal citizen, a consistent Christian. His last illness, extending over a period of three months, was cruelly severe, but he bore his suffering, which was daily making sad inroads upon his previously robust frame, without a murmur of complaint or impatience. The gradual decay of his body did not impair his intellectual powers, and his mind remained clear to the last. No man, perhaps, ever set his house more perfectly in order than he did; not even the most minute details were overlooked. Impartial history will assign to Washington L. Atlee a high rank in the temple of fame as an original

thinker, an accomplished surgeon and physician, and a benefactor of his race.

Dr. Edmund Randolph Peaslee, whose name, as has been stated, is, like that of Atlee, so honorably associated with the progress of ovariectomy in this country, died in January, 1878, only about eight months before his distinguished Philadelphia confrere. Born in New Hampshire in 1814, he was emphatically a many-sided man, of high culture, great refinement, vast industry, and extraordinary professional resources in cases of emergency. With the exception of Nathan Smith, of New Haven, a contemporary of McDowell, I have no recollection of any man who in recent times lectured on so many branches of medical science or filled chairs in so many medical schools. Anatomy and physiology, general pathology, surgery, obstetrics, and gynecology were the diversified themes which from time to time engaged his facile brain as a public teacher. He was also an expert and cautious operator and a most accomplished physician, especially distinguished for his skill as a diagnostician. Besides numerous papers contributed to the periodical press, he was the author of several books; among others an exhaustive treatise on "Ovarian Tumors," published in 1872, a production which, while it greatly enhanced his reputation at home, made his name widely known abroad. Of his operations I have already spoken. The private character of Dr. Peaslee may be best summed up in the beautiful words of his biographer, the Rev. Dr. Bartlett, President of Dartmouth College, who, having known him long and well, thus speaks of him: "His day," says this accomplished scholar, "is done; his sun is set. But from the scene of its setting there streams up a trailing brightness, as of some perpetual zodiacal light—the shining example of one who, while profound in science, wise in counsel, and excellent in skill, was also sincere in piety, blameless in manhood, true in friendship, genial in intercourse, and whose presence enters the sick-chamber like a sunbeam from heaven streaming into a darkened room. Its mild radiance lingers in hundreds of homes and thousands of hearts. It is a life profitable for young men to contemplate."

Young men of the Kentucky State Medical Society, listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is, not this operation or that, not ovariectomy or lithotomy, or a hip-joint amputation, which have reflected so much glory on Kentucky medicine, but is preventive medicine, the hygiene of our persons, our dwellings, our streets; in a word, our surroundings, whatever and wherever they may be, whether in city, town, hamlet,

or country, and the establishment of efficient town and state boards of health, through whose agency we shall be the better able to prevent the origin and fatal effects of what are known as the zymotic diseases, which carry so much woe and sorrow into our families and which often sweep, like a hurricane, over the earth, destroying millions of human lives in an incredibly short time. The day has arrived when the people must be roused to a deeper and more earnest sense of the people's welfare, and when suitable measures must be adopted for their protection as well as for the better development of their physical, moral, and intellectual powers. This is the great problem of the day, the question which you, as representatives of the rising generation of physicians, should urge, in season and out of season, on the attention of your fellow-citizens; the question which, above all and beyond all others, should engage your most serious thoughts and elicit your most earnest cooperation. When this great, this mighty object shall be attained; when man shall be able to prevent disease and to reach with little or no suffering his three-score years and ten, so graphically described by the Psalmist, then, but not till then, will the world be a paradise, with God, Almighty, All-wise, and All-merciful, in its midst, reflecting the glory of His majesty and power, and holding sweet converse in a thousand tongues with the human family.

PRESENTATION ADDRESS.

REMARKS MADE BY PROFESSOR RICHARD O. COWLING, M. D., OF LOUISVILLE, IN PRESENTING THE DOOR-KNOCKER OF DR. McDOWELL TO DR. GROSS.

Dr. Gross, the Kentucky State Medical Society thanks you for the beautiful oration you have just delivered on Ephraim McDowell. Surely hereafter, when history shall recall his deeds and dwell upon his memory, it will relate how, when he was fifty years at rest, the greatest of living surgeons in America came upon a pilgrimage of a thousand miles to pronounce at his shrine the noble words you have spoken.

The Society does not wish that you should return to your home without some memento of the occasion which brought you here, and which shall tell you also of the admiration, the respect, and the affection it ever bears for you.

I have been appointed to deliver to you this simple gift, with the trust and the belief that it will always pleasantly recall this time, and be a token of our feelings toward you. We wished to give you something directly connected with McDowell and it occurred to us that this memento of the dead surgeon

would be most appropriate. It is only the knocker which hung upon his door, but it carries much meaning with it.

The sweetest memories of our lives are woven about our domestic emblems. The hearthstone around which we have gathered, the chair in which our loved ones have sat, the cup their lips have kissed, the lute their hands have swept—what jewels can replace their value? Do you remember the enchantment that Douglas Jerrold wove about a hat-peg? How at the christening of a child they gave it great gifts of diamonds and pearls and laces, and when the fairy godmother came, and they expected that she would eclipse them all with the magnificence of her dowry, how she gave it simply a hat-peg? They wondered what good could come of that. The boy grew to be a man. In wild pursuits his riches were wasted, and at last he came home and hung his hat upon that peg. And while the goodman's hat was hanging there peace and plenty and order and affection sprang up in his home, and the hat-peg was indeed the talisman of his life.

I would that the magician's wand were granted me a while to weave a fitting legend around this door-knocker, which comes from McDowell to you, Dr. Gross. There is much in the emblem. No one knows better than you how good and how great was the man of whom it speaks. It will tell of many summons upon mercy's mission which did not sound in vain. Ofttimes has it roused to action one whose deeds have filled the world with fame. A sentinel, it stood at the doorway of a happy and an honorable home, whose master, as he had bravely answered its signals to duty here below, so when the greater summons came, as trustfully answered that, and laid down a stainless life.

It belongs by right to you, Dr. Gross. This household genius passes most fittingly from the dearest of Kentucky's dead surgeons to the most beloved of her living sons in medicine. She will ever claim you as her son, and will look with jealous eye upon those who would wean you from her dear affection.

And as this emblem which now is given to you hangs no longer in a Kentucky doorway, by this token you shall know that all Kentucky doorways are open at your approach. By the relief your skill has wrought; by the griefs your great heart has healed; by the sunshine you have thrown across her thresholds; by the honor your fame has brought her; by the fountains of your wisdom at which your loving children within her borders have drunk, the people of Kentucky shall ever open to you their hearts and homes.

DR GROSS'S REPLY.

I am much overcome, gentlemen of the Kentucky State Medical Society, by this mark

of your approbation. I am not the great man your speaker has declared me to be, but I gratefully appreciate the feelings that have prompted his words. I claim to be but an earnest follower of surgery, who during a period which has now extended beyond a half a century, has striven to the best of his ability to grasp its truths and to extend the beneficence of its offices. I am not to be

and much of the fruition of its hopes. To the warm hearts of the many friends it was my good fortune to secure within these borders do I owe it that those struggles were cheered and regards beyond my deserts were secured.

I take this emblem now offered me as the most valued gift of my life. It shall be received into my home as a household god, envired by all the memories of goodness and



DOCTOR RICHARD O. COWLING

1839--1881

placed by the side of McDowell, for what I may have done in our art; but if this reward be a measure of the appreciation I hold of the good-will of the people in this Commonwealth, I may claim it for that.

The years of my life which I passed in Kentucky represent the most important era in my career. They witnessed many of its struggles

greatness to which your speaker has referred, and above all recalling this scene. Dying I shall bequeath it, among my most important possessions, to the family that I may leave, or in failure of that, to be presented to the archives of some society.

I thank you again, gentlemen, and I wish I were able to tell you better how much I thank you.

ADDRESS OF PROFESSOR LEWIS A.
SAYRE, M. D.PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION
WHEN THE MONUMENT WAS
DEDICATED.

No word from me can add a single laurel to the crown of the immortal McDowell, whose history and services to mankind have been so beautifully and truthfully portrayed by the distinguished orator of the evening, the Nestor of American surgery, Prof. Gross. In fact, any remarks from me in my individual ca-

tion to the memory of Ephraim McDowell, who has contributed more to the alleviation of human suffering and the prolongation of human life than any other member of the medical profession in the nineteenth century. We can scarcely comprehend the greatness of this man's mind, and the truly wonderful genius of McDowell, until we stop to consider who he was, what he did, and when and where he did it. A village doctor in the backwoods frontier, surrounded by Indians and the buffalo, almost beyond the bounds of civilization, with no books to refer to, with no precedent to guide, with no one to consult but his own un-



DOCTOR LEWIS A. SAYRE

1920-1900

capacity would seem almost inappropriate, but in my official capacity as President of the American Medical Association it is my duty as well as my pleasure to bring to the monumental shrine the ovations of the entire medical profession of these United States. And, Sir, I venture here the prediction that in all times to come the intelligent surgeons, either in person or in thought, from every part of the civilized globe, will wander here to Danville to pay their respects and sense of obliga-

aided judgment, with no one to share the responsibility if unsuccessful, unaided and alone assumes the responsibility of removing a disease which up to that time had been considered absolutely incurable. Think for a moment what would have been the result of failure—a coroner's jury, and a verdict of willful murder, which at that time would have been pronounced correct by the entire medical profession throughout the civilized globe. All this he dared and did assume, because his

clear intellect had reasoned out his plan of procedure, and his careful dissections had pointed out to him the path to victory. And now every intelligent surgeon in the world is performing the operation as occasion requires, until at the present time, as Dr. Thomas has stated, forty thousand years have already been added to the sum total of human life by this one discovery of Ephraim McDowell.

Another fact strikes me very forcibly, Mr. President, and that is the heroic character of the woman who permitted this experimental operation to be performed upon her. The women of Kentucky in that period of her early history were heroic and courageous, accustomed to brave the dangers of the tomahawk and scalping-knife, and had more self-reliance and true heroism than is generally found in the more refined society of city life; and hence the courage of Mrs. Crawford, who, conscious that death was inevitable from the disease with which she suffered, so soon as this village doctor explained to her his plan of affording her relief, and convinced her judgment that it was feasible, immediately replied, "Doctor, I am ready for the operation; please proceed at once and perform it."

All honor to Mrs. Crawford! Let her name and that of Ephraim McDowell pass down in history together as the founders of ovariectomy.

Kentucky has many things to boast of in climate, soil, and magnificent forests of oak carpeted with her native bluegrass, far surpassing in beauty and grandeur the most elegantly cultivated parks of England. She is famed for her beautiful and accomplished women; she is renowned for her statesmen, her erators, and her jurists: her Clays, her Johnsons, her Wickliffes, her Crittendens, her Marshalls, her Shelys, her Prestons, her Breckinridges, and a host of others; but no name will add more to the luster of her fame than the one whose name we this day commemorate by erecting this monument to Ephraim McDowell, the ovariectomist.

CORRESPONDENCE.

LETTERS OF REGRET FROM DISTINGUISHED MEMBERS OF THE PROFESSION WHO COULD NOT ATTEND THE DEDICATION.

L. S. McMurtry, M. D., Chairman McDowell Monument Committee:

Dear Sir:—I thank you very much for your invitation to attend the meeting connected with the McDowell monument, and I deeply regret that I am unable to leave London at present.

It would give me extreme pleasure to be present at so interesting a ceremony, to make the acquaintance of so many of my American professional brethren, and to show my respect

to the memory of "the Father of Ovariectomy."

I shall hope in some future year to visit your great country again, and to see the monument you have raised over the grave of McDowell.

Very sincerely,

T. SPENCER WELLS.

3 Upper Grosvenor Street, London W., April 24, 1879.

L. S. McMurtry, Chairman McDowell Monument Committee:

Dear Sir:—I regret that it is not in my power to renew the pleasure of a former visit to Kentucky and take part in the exercises at the dedication of the McDowell monument, at least so far as to be a sympathetic listener to all the eloquence which the occasion will call forth.

I feel a personal interest in the surgical conquest which is to be commemorated in addition to that which all the world recognizes. Among the virtues of the century this is a twin with myself. Dr. McDowell's first operation dates from the same year as that in which I first inhaled the slow poison that envelops our planet, the effects of which I have so long survived. I thank God that the other twin will long outlive me and my memory; carrying the light of life into the shadows of impending doom, the message of hope into the dark realm of despair; opening the prison to them that are bound and giving them beauty for ashes, the beauty of a new-born existence even, it may be, as I have but recently seen it, of youthful and happy maternity in place of the ashes for which the inevitable urn seemed already waiting.

I am glad that this great achievement is to be thus publicly claimed for American surgery. Our trans-Atlantic cousins have a microphone which enables them to hear the lightest footsteps of their own discoverers and inventors, but they need a telephone with an eart-trumpet at their end of it to make them hear anything of that sort from our side of the water. There is another kind of trumpet they do not always find themselves unprovided with, as those who remember Sir James Simpson's astonishing article, "Chloroform," in the eighth edition of the *Encyclopedia Britannica*, decently omitted and ignored in the ninth edition of the same work, do not need to be reminded.

If there was one who could dispute Dr. McDowell's claim to be called "the Father of Ovariectomy" it would have been our own Dr. Nathan Smith, our own and your own too, for he also was born and lived and died on the sunset side of the Atlantic, and within the starry circle which holds us all. Dr. Smith performed the operation of ovariectomy with success early in the century, but unfortunate-

ly there is no record, so far as I know, of the exact date. I allude to this fact not to invalidate Dr. McDowell's claim, for an undated case can not do it, but to couple with his name as at least next in priority that of another native American practitioner worthy of companionship with the greatest and best.

A single thought occurs to me which may help to give this occasion something more than professional significance. Although our political independence of the mother country has been long achieved, our scientific and literary independence has been of much slower growth.

And as we read the inscription on this monument, let us gratefully remember that every bold, forward stride like this grand triumph of American science, skill, and moral courage, tends to bring us out of the present period of tutelage and imitation into that brotherhood and self-reliance which should belong to a people no longer a colony or a province, but a mighty nation.

I am, dear sir,

Yours very truly,
OLIVER WENDELL HOLMES.

Boston, May 9, 1879.

L. S. McMurtry, Chairman McDowell Monument Committee:

My Dear Sir:—It is with extreme regret that I find myself prevented from accepting your kind invitation to take part in the dedication of the monument to the "Father of Ovariectomy." Although absent in body let me assure you that I shall be present in spirit.

Kentucky cherishes the memory of many noble sons, but nowhere in her annals can she point to a name more deserving of her pride than that which adorns the monument erected to commemorate McDowell's glory.

Others have given her the proud records of the warrior, the statesman, the philosopher, and the philanthropist. McDowell, favored by God above other men, has already bestowed upon humanity more than forty thousand years of active life, and insured for the future results which will surely dwarf those of the past.

The noble tribute which you erect in his honor will last long, but it will crumble into dust and be scattered abroad by the winds, while his memory will continue to live green and vigorous in the hearts of a grateful posterity.

With sentiments of sincere regard, I am
Dear sir,

Yours very truly,
T. GAILLARD THOMAS.

294 Fifth Ave., New York. May 1, 1879.

L. S. McMurtry, Chairman McDowell Monument Committee:

Dear Doctor:—I have much pleasure in ac-

knowledging receipt of the invitation to attend the memorial occasion in honor of "the Father of Ovariectomy." Unfortunately for me some professional duties here, which can not in any way be postponed, will compel my return home from Atlanta immediately after the adjournment of the American Medical Association.

It is well in the name of American surgery, and in the name of a common philanthropy, that this honor, though tardy, should be paid to the memory and fame of Ephraim McDowell.

I cannot but think of the fact that the erection of the monument is largely due to the original suggestion and active efforts of one who recently passed away from earth before he had reached the noon of his power and reputation, one who was esteemed and admired by every physician North, South, East and West. The monument will tell not only of "the Father of Ovariectomy," but also of John D. Jackson.

I am, dear sir, yours very truly, Y
THEOPHILUS PARVIN,

Indianapolis, Ind., May 1, 1879.

L. S. McMurtry M. D., and Others of the McDowell Monument Committee:

Gentlemen:—Your kind invitation to attend the dedication of the McDowell monument is just received, for which I beg leave to return my thanks, and the assurance of my sincere regret that I shall be prevented from taking part in the interesting ceremonies.

The occasion is one of extraordinary import, in that it is the first and only instance in the history of the United States that such honors have been paid to the memory of a physician; and secondly, that the virtues which it is proposed to perpetuate in the monument were consecrated to the saving of human life and the mitigation of human suffering. Of the man Ephraim McDowell we know comparatively little, but of the great original ovariectomist no one at all concerned in the progress of surgery can be ignorant. As a Kentuckian no less than as a surgeon I have always felt the deepest interest in his history, and have sought in his life and surroundings to penetrate to the origin of the great thought, and still greater courage, that gave expression to the thought which, without the sanction of precedent, and unaided by the advice or sympathy of others, culminated in the institution of an operation by which thousands of women heretofore doomed to early death now live to bless his name.

But who can discover and open the secret door which hides from profane view the sacred laboratory of genius? Or who can trace the footsteps of the inspired discoverer as he works his narrow way out to the con-

finest of human experience, and with purged eye looks into the mysteries which lie beyond? All that we can do is to cheer on with our words of encouragement, and, when the work is done, with willing hands distribute its benefits to those who are in need, never forgetting to pronounce a blessing upon the author. In this spirit of humble reverence I bow my bared head before him whom you this day exalt in the sight of the whole world as one of its greatest benefactors, and proclaim by your act that the highest and noblest ambition of the physician should be the saving of human life. Who is there since the days of Jenner, who can in this respect compare with the "backwoods surgeon of Kentucky?" I would not derogate in the slightest degree from the deserved honor which belongs to many who have followed their profession with equal zeal and

EPHRAIM McDOWELL.*

By LEWIS S. McMURTRY, M. D., L.L. D.,
Louisville.

It is most appropriate that in this one hundredth year since McDowell's epoch-making work this society, founded by his followers in America, should celebrate his achievement and thereby keep afresh in the professional mind the source and origin of a great department of surgery.

No conception of Ephraim McDowell's character and personality could be more remote from the truth than that he was a rude, but courageous, backwoodsman, who by accident or mishap undertook an untried feat in surgery and succeeded in spite of a disregard of all surgical rules and established principles.



CAMBUS KENNETH

THE HOME OF DR. McDOWELL, NEAR DANVILLE

earnestness, and who have added largely to the resources of the healing art, but in the inscrutable wisdom of the Creator of all things it has not been given to any other single laborer in the field of medicine and surgery upon this western hemisphere to confer so great a blessing upon the human race.

All honor to the memory of Ephraim McDowell, the man of genius, the wise and heroic surgeon, the benefactor of his kind. When the granite shaft which you have erected to signalize what he was, and what he did shall have fallen into decay, his name will still be perpetuated by the many lives saved through his instrumentality.

I am, gentlemen, with great esteem, your obedient servant,

T. G. RICHARDSON.

New Orleans, May 9, 1879.

Let us for a moment consider his origin and preparation. He was born in Rockbridge county, Virginia, on the eleventh day of March, 1771, when the American colonies were in the agitation preceding the revolution. His father, Samuel McDowell, was a prominent man in Virginia and a member of the Assembly of that State. In 1782, he was sent by the Legislature as a land commissioner to Kentucky, which was then a county or appanage of Virginia. A year later he was appointed judge of the District Court of Kentucky and removed his family to the town of Danville where the sittings of the court were held and where he resided permanently thereafter.

*An address delivered before the American Gynecological Society at the Centennial Celebration of McDowell's first Ovariectomy.

Ephraim McDowell's mother was Sarah McClung, a member of a distinguished Virginia family. McDowell was a product of that civilization which was planted on the Virginia coast, and from which came Washington, Jefferson, Richard Henry Lee, Patrick Henry, Benjamin Harrison, Edmund Pendleton, George Mason and other soldiers, statesmen, and patriots who founded this great republic. His early education was attained at the classical seminary at Georgetown, Kentucky, the best school accessible at that time. After completing his studies at the seminary, he went to Staunton, Virginia and following the custom of that period entered upon the study of medicine in the office of Dr. Humphreys, a graduate of the University of Edinburgh and a practitioner of high reputation. In 1793-94 he attended the University of Edinburgh, then universally regarded the most famous centre of medical education in the world. As fellow students, McDowell was associated there with Dr. Samuel Brown, afterward one of the founders and teachers of Transylvania University at Lexington, Kentucky, and Dr. Hosack and Dr. Davidge, of New York, all of whom subsequently attained eminence in the profession. As far as we know, the degree of M. D. was not conferred upon him until 1823, when, entirely unsolicited on his part, the University of Maryland conferred upon him the honorary degree of M. D. The Medical Society of Philadelphia, at the time the most distinguished of its kind in this country, sent him its diploma in 1807, two years before he performed his first ovariectomy. Thus it will be seen that McDowell had attained national distinction as a surgeon before he undertook the work which has made him famous. While at the University of Edinburgh McDowell attended the private instructions of John Bell, the most able and eloquent of the Scottish surgeons of his day. That portion of his lectures describing tumors of the ovaries and the power and eloquence with which he depicted the hopeless fate to which their victims were condemned, made a powerful impression upon his auditor. Indeed, McDowell afterwards stated that the principles and suggestions at this time enunciated by his master impelled him sixteen years afterward to attempt what was considered an impossibility. In 1795 McDowell returned to his home at Danville and entered upon the practice of his profession. Being a man of classical education, coming from the most famous medical school of the world, he soon easily assumed the first professional position in his locality, and within a few years was known throughout the Western and Southern States as the first surgeon of his entire section of country. Indeed, until Dr. Benjamin W. Dudley, of Lexington, Kentucky, came into the field Dr. McDowell was undisputedly the most eminent

surgeon west of the Alleghanies. During this time his practice extended in every direction, persons coming to him from all the neighboring States, and he frequently making long journeys on horseback to operate upon persons whose condition would not permit them to visit at his home. As far as is known, he was in the habit of performing every surgical operation then practiced. In lithotomy he was especially successful, and was known to have operated, up to 1828, twenty-two times without a death. He operated many times for strangulated hernia, and did successfully various amputations and other operations, including tracheotomy. We must remember that anesthesia was unknown in his day.

In 1809, fourteen years after he began the



THE FAMILY CREST

practice of his profession, McDowell's opportunity was presented. He was called to see a Mrs. Crawford, living sixty miles distant from Danville, who was supposed by herself and her physicians to be pregnant and beyond her term, with most serious complications. After careful examination he pronounced the case to be one of ovarian tumor; explained the hopeless character of the disease; expressed his conviction that it was feasible to undertake its removal; frankly announced that it would be in the nature of an experiment, but an experiment that was promising. In a word, he had faith in himself and his resources, which inspired confidence and hope in the patient. Mrs. Crawford accepted the proffered aid at once, and in a few days went to Danville, sixty miles distant, on horseback, where the operation was successfully

performed and followed by prompt and perfect recovery.

It is known that McDowell had an excellent medical library for that time, and that he devoted much of his leisure time to his books, but he possessed an aversion to writing. Like many able men in our profession of the present day, he was absorbed in practice, and literary work of every kind was burdensome to him. Moreover, we must remember that he did not have the stimulus of the daily mail and numerous medical journals; also that no medical society was in existence in his section of the country. Seven years elapsed after the operation before he made a report for publication, during which time he had operated in two additional cases, both followed by recovery. The title of his paper is "Three Cases of Extirpation of Diseased Ovaries," and his description of the symptoms and operation is concise and clear, describing most essential points, but without any minute account of the pathology and daily progress after operation. That he was inspired by the teachings of Mr. John Bell, of Edinburgh, to undertake the operation is apparent from the fact that his report of his cases was forwarded to his revered master. The report failed to reach Mr. Bell, who was absent on account of ill health, and McDowell prepared another copy and forwarded it to the *Eclectic Repertory and Analytical Review*, published in Philadelphia, where it appeared in the issue of October, 1816. The brevity and disregard of many essential details which characterized the report, exposed McDowell to criticism, and articles sarcastic and incredulous appeared in the *Repertory*, while Dr. James Johnson, the learned editor of the *London Medical-Chirurgical Review*, expressed outright his disbelief of McDowell's statements. A few years afterward when the accuracy of the reports had been verified and confirmed by the report of additional cases, Dr. Johnson editorially acknowledged his error, saying, "There were circumstances in the narrative of the first three cases that raised misgivings in my mind, for which uncharitableness we ask pardon of God and Dr. McDowell, of Danville."

In October, 1819, three years subsequent to his first publication, he published in the same journal two additional cases. In this report, he alludes to the several criticisms which had appeared regarding his first paper in these words: "I thought my statement sufficiently explicit to warrant any surgeon's performing the operation when necessary without hazarding the odium of making an experiment and I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough to enable any good anatomist, possessing the judgment requisite for a surgeon, to operate with safety. I hope no

operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon forever incomprehensible." If we had no other knowledge of McDowell's mental cast and surgical ideals, these words would stamp him as a surgeon of broad and elevated view, with lofty conception of the science and art of surgery, and keen appreciation of the advanced ground on which he trod. The total number of ovariectomies he performed is not certainly known. Dr. William A. McDowell, his nephew and pupil, afterwards his partner, stated that the total number of ovariectomies done by Ephraim McDowell was thirteen, with eight recoveries and five deaths.

The essential points of McDowell's operative technique are: (1) The parietal incision was made external to the border of the rectus muscle; (2) the pedicle was ligated before opening and evacuating the cyst; (3) care was observed to cleanse the peritoneum of fluids; (4) drainage was provided by bringing the ligature out through the lower angle of the incision and the ligature eliminated in that way; (5) the operation occupied only twenty-five minutes, expedition resulting more from the absence of an anesthetic, doubtless, than otherwise. In the report of the second case, he says, "I laid her side open." In the third case, he adopted the median incision, which he indicates thus: "I changed my place of opening to the linea alba." In all his cases he ligatured the pedicle before separating adhesions or tapping the tumor. In the third case he mentions that the ligatures were not released for five weeks, at the end of which time the cord was taken away.

In the brief report of his first case, Dr. McDowell failed to record such details of environment, preparation, and after treatment as so important an operation should have received. He even failed to record the room or house in which the operation was performed. Either tradition or imagination has depicted the operator fearlessly doing his work while a mob gathered about his house threatening his life on account of the fancied reckless hazard of life in attempting an untried experiment. Having been born and reared near Danville, and educated there, and having known some of McDowell's contemporaries, I am sure this story is pure fiction, without any semblance of facts for its basis. McDowell was perhaps the most prominent and popular citizen of the community, commanding the respect and confidence of all classes, and known far and near as a great surgeon. The house in which Mrs. Crawford underwent operation and remained while under treatment is not known. It is not probable that such an operation was done in the doctor's office; but

more probably in some bedroom prepared for her care and nursing after operation.

In a most accurate and painstaking sketch of McDowell by the late Dr. John D. Jackson, of Danville, he states that in 1822 McDowell made a journey of several hundred miles on horseback to the Hermitage, the residence of President Andrew Jackson, near Nashville, Tennessee, to do an ovariectomy in the case of a Mrs. Overton. He was assisted in the operation by General Jackson and a Mrs. Priestly. Mrs. Overton recovered. McDowell was the guest of General Jackson during his stay in the neighborhood. Another one of his patients in Tennessee was James K. Polk, afterward President of the United States, upon whom he did lithotomy when the patient was fourteen years of age.

In 1802, Dr. McDowell married Sarah, a daughter of Isaac Shelby, Kentucky's first and greatest governor, a soldier and statesman, with whom he lived most happily and raised a family of two sons and four daughters, only three of whom survived him. Mrs. McDowell survived her husband by ten years. Dr. McDowell was nearly six feet in height, with dark hair and eyes, and possessed of exceptional strength and endurance. He was dignified in bearing and possessed a commanding presence, but quite free from austerity. He is described as an amiable and approachable man, with abundant cheerfulness and good humor. As a citizen he took an active part in all movements for the welfare of the community. He was especially interested in education, and contributed liberally of his time and means to provide educational facilities so much needed at that time. He was a member of the first Board of Trustees of Centre College of Kentucky, now Central University of Kentucky. He contributed personally the lot upon which Trinity Episcopal Church in Danville now stands. In his fifty-ninth year while in the full vigor of life, he was seized with an acute fever and died on the twentieth day of June, 1830, after a brief illness.

In 1852, twenty-two years after the death of Ephraim McDowell, Professor Samuel D. Gross, then a resident of Louisville, presented to the Kentucky State Medical Society a sketch of the life and original surgical work of the first ovariectomist. Professor Gross brought to his task his characteristic accuracy and thoroughness of investigation. He engaged in a laborious correspondence with the family, relatives and contemporaries of McDowell, and collected all available knowledge bearing upon his life and character. This sketch

was subsequently incorporated in Gross' American Medical Biography, published by Lindsay & Blakiston, of Philadelphia, in 1861. The critical investigations by Professor Gross of the original reports of various operators, together with the incontrovertible testimony presented as to McDowell's priority, placed McDowell's claims beyond all dispute and established firmly his position as the originator, by successful accomplishment, of the radical cure of ovarian tumors by abdominal section.

In 1879, the Kentucky State Medical Society erected over the grave of McDowell, at Danville, a monument to perpetuate his name and fame. The dedication of this monument, on the fourteenth day of May, 1879, was the most imposing event in the annals of the medical profession of Kentucky. The address of the occasion was delivered by Professor Gross before a large audience composed of members of the State Medical Society, officials of the State, and a large concourse of prominent citizens. Upon the speaker's stand were seated the Governor of the Commonwealth, the Secretary of State, and other officials; the president of the American Medical Association, Dr. Lewis A. Sayre; the venerable Dr. Gilman Kimball, of Lowell, Mass., who had performed ovariectomy nearly three hundred times; and numerous other eminent American surgeons. Among the tributes to McDowell presented on this occasion were letters from Sir Spencer Wells, Oliver Wendell Holmes, T. Gaillard Thomas, Edmund Randolph Peaslee, Theophilus Parvin, and others. The oration of Professor Gross is a master-piece of biographical literature, quite worthy of the occasion and its distinguished author. The occasion is memorable for the achievement it celebrated, and memorable for the poet who put it in verse. Achilles can never be forgotten because Homer fixed his fame.

Other and more eloquent speakers will tell you of the struggles of McDowell's followers in America, in Great Britain, in France, and in Germany. The work was in the hands of a few courageous spirits, who fought on in the face of opposition and even persecution until the dawn of the Listerian era lighted the way to the present proud position of abdominal surgery. Pelvic and abdominal surgery began with ovariectomy; ovariectomy began with McDowell.

II. THE TRANSYLVANIA UNIVERSITY GROUP

FOREWARD

THE MEDICAL DEPARTMENT OF TRANSYLVANIA UNIVERSITY*

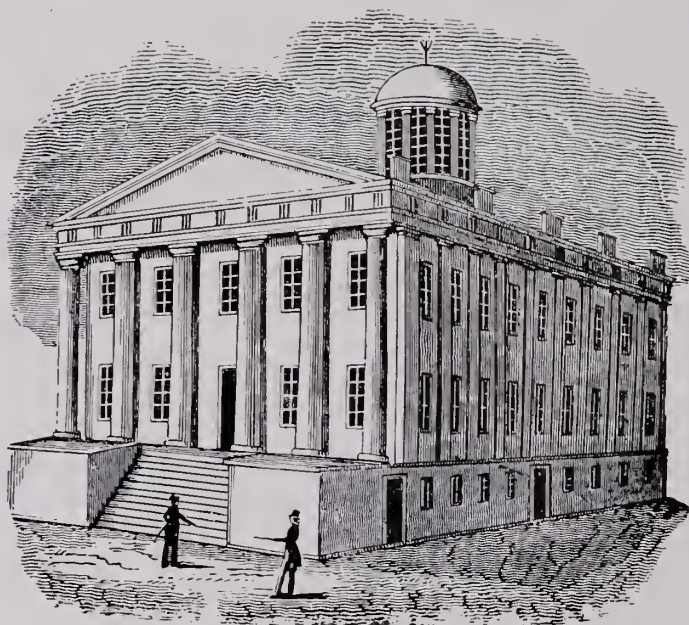
By ROBERT PETER, A. M., M. D., Lexington.

The history of medicine and of the earliest medical men in Kentucky clusters around the name of Transylvania University.

The State of Virginia, in 1780—when “Kan-tuck-ee” or “Ken-tuckee,” as this

ary of learning,” that “might at a future day be a valuable fund for the maintenance and education of youth; it being the interest of this Commonwealth always to promote and encourage every design which might tend to the improvement of the mind and the diffusion of knowledge, even amongst the most remote citizens, whose situation a barbarous neighborhood and a savage intercourse might otherwise render unfriendly to science.”

Three years thereafter, 1783, when Ken-



TRANSYLVANIA UNIVERSITY MEDICAL HALL

Erected in 1839. Burned in 1863. Provision seems to have been made for the medical classes in the first University building, but from the time this was destroyed in 1829 until the construction of Medical Hall, above shown, in 1839, these classes appear to have been more or less migratory bodies, lectures and demonstrations being given in the offices of individual professors, or in a room provided by them independently, as is shown in the context and in the picture of Fairlawn.

country was then called, was only a little-explored portion of that State—placed eight thousand acres of escheated lands within that county into the hands of thirteen trustees “for the purposes of a public school or semin-

tucky had become a district of Virginia, the General Assembly, by a new amendatory Act, re-endowed this “public school” with twelve thousand acres more of escheated lands and gave it all the privileges, powers, and immunities of “any college or university in the State,” under the name of “Transylvania Seminary.”

*The medical profession of Kentucky is indebted to the Filson Club for the use of many of the sketches and pictures in this group.

In the wild and sparsely settled country this seminary began a feeble existence under the special fostering care and patronage of the Presbyterians, who were then a leading religious body, aided by individual subscriptions and by additional State endowments.

The Reverend James Mitchell, a Presbyterian minister, was its first "Grammar Master," in 1785. In 1789 it was placed under the charge of Mr. Isaac Wilson and located in Lexington, with no more than thirteen pupils all told. The Reverend James Moore, educated for the Presbyterian ministry but subsequently an Episcopalian, and first Rector of Christ Church, Lexington, was appointed "Director," or the first acting President of the Transylvania Seminary, in 1791. He taught in his own house for want of a proper seminary building, with the aid of a small library and collection of philosophical apparatus. This library and apparatus had been donated by the Reverend John Todd, of Virginia, who, with other influential Presbyterians, had been mainly instrumental in procuring the charters and endowments from the General Assembly of Virginia.

The offer of a lot of ground in the town of Lexington to the trustees of Transylvania Seminary, by a company of gentlemen calling themselves the "Transylvania Land Company," induced the trustees to permanently locate the seminary in that place in 1793. On that lot, the first school and college building were placed, and on it was afterward erected the more commodious University edifice in which taught the learned and celebrated President, Doctor Horace Holley. This first University building was destroyed by fire May 9, 1829. In later years, 1879, this old "College lot" was beautified and improved by tree-planting and otherwise by liberal citizens of Lexington, moved by the efforts of Mr. H. H. Gratz, and designated first "Centennial Park," and afterward "Gratz Park," in honor of Benjamin Gratz, being not now utilized for special educational purposes.

With limited success the first "Director of Transylvania Seminary" taught in Lexington until 1794, when he was superseded by the election by the Board of Trustees of Mr. Harry Toulmin as first President of the Seminary.

This gentleman, a learned Unitarian minister of the school of Doctor Priestley, and a native of England, resigned the Presidency in 1796, and was Secretary of State of Kentucky under Governor Garrard.

Intense feeling at the election of Mr. Toulmin on the part of the leading Presbyterians, who claimed the Seminary as their own peculiar institution, caused them to obtain in 1796 a charter from the Legislature of Ken-

tucky, now a State, for a new institution of learning which they could more exclusively control. This was the "Kentucky Academy," of which the Reverend James Blythe, of their communion, was made President.

On the establishment of the Kentucky Academy by the dissatisfied Presbyterians in 1796, an active rivalry between that school and Transylvania Seminary operated to the injury of both institutions as well as to the cause of education in general. Therefore, after two years of separate existence these two institutions, with the consent of the trustees of both, were united in 1798 by an Act of the General Assembly of Kentucky into one, "for the promotion of public good and learning," under the title of Transylvania University. The consolidation was made under the original laws which governed the Transylvania Seminary, as enacted by the General Assembly of Virginia.

Under the act of consolidation of December 22, 1798, this University was organized by the appointment of Reverend James Moore, of the Episcopal Church, as first acting President, with a corps of professors. And now, for the first time in the Mississippi Valley, was the effort made to establish a medical college.

Early in 1799, at the first meeting of the trustees of the new Transylvania University, they instituted "The Medical Department" or College of Transylvania, which subsequently became so prosperous and so celebrated, by the appointment of Doctor Samuel Brown as Professor of Chemistry, Anatomy, and Surgery, and Doctor Frederick Ridgely as Professor of Materia Medica, Midwifery, and Practice of Physic. Dr. Brown qualified as Professor October 26, 1799, and Doctor Ridgely the following November.

Dr. Brown was authorized by the Board to import books and other means of instruction for the use of the medical professors to the amount of five hundred dollars, a considerable sum in those days, and he and his colleagues were made salaried officers of the University.

A Law College was also organized at this time in the University by the appointment of Colonel George Nicholas, a soldier of the Revolution and member of the Virginia Convention, as Professor of Law and Politics.

The annals of the earlier efforts to establish medical education and a medical college in connection with Transylvania University, the first in the whole West and the second in the United States, are meager and unsatisfactory.

As already stated, the first Medical Professors in this University, Doctors Samuel Brown and Frederick Ridgely, 1799, no doubt taught and lectured occasionally to such stu-

dents as were present. The files of the old *Kentucky Gazette* show that Doctor James Fishback, who was unanimously appointed to the Chair of Theory and Practice of Medicine in Transylvania in 1805, advertised to lecture, and did probably lecture on these subjects. But he resigned in 1806. Doctor James Overton, who had been appointed to the chair of Materia Medica and Botany in 1809, said in his letter of acceptance, on the occasion of his reappointment in the reorganization of the Medical Faculty in 1817, that he "had engaged for some time in giving lectures on Theory and Practice in this town," etc.

According to the best recollection of the late Doctor Coleman Rogers, for a long time before his death a resident of Louisville, the Medical College of Transylvania University was reorganized in 1815 by the appointment of the following Faculty:

Doctor Benjamin W. Dudley, Professor of Anatomy and Surgery.

Doctor Coleman Rogers, adjunct to this chair.

Dr. William H. Richardson, Obstetrics, etc.

Doctor Thomas Cooper, Judge Cooper, of Pennsylvania to the chair of Chemistry, Mineralogy, etc.

Doctor James Blythe, then acting President of the University, was to give chemical instruction. Doctors Cooper and Rogers did not accept this appointment. According to Doctor Rogers' recollection a regular course of lectures was not delivered by this Faculty, although Doctors Dudley and Overton probably both lectured or taught "as they previously had done."

Dr. C. C. Graham says: "What few private students there were in Lexington went from shop to shop, at that day doctors' offices were so called, and got three only, Dudley, Richardson, and the eccentric Overton, to give us a talk."

Dr. Dudley's own recollection, as detailed to the present writer, was also that he and Doctor Overton, as well as Doctor Blythe, lectured in 1815-16 to about twenty students, of whom the late Doctor Ayres and the yet surviving Nestor of Transylvania graduates, Doctor Christopher C. Graham, of Louisville, now almost a centenarian, were in attendance as pupils. Very little can now be ascertained, from existing records, of the character of Professor James Overton, Doctor Christopher C. Graham, in a recent letter to the writer, gives some reminiscences of him in the following language: "Doctor Overton was a small, black-eyed man, very hypochondriacal and sarcastic, notoriously so, and yet quite chatty, humorous, and agreeable; telling his class many funny things. He was well educated for his day and plumed himself especially on his Greek." Doctor Overton removed

from Lexington to Nashville, Tennessee, in 1818.

The late Doctor Ayres, of Danville, and latterly of Lexington, informed the writer that, in 1815, Doctor Dudley, having recently returned from Europe, was invited by himself and other medical students to demonstrate to them in anatomy and surgery. Learning that he would lecture to them if a class were formed, they made up one of from twenty to twenty-five, and Doctor Dudley lectured to them on anatomy and surgery in "Trotter's Warehouse," a house situated on the southeast corner of Main and Mill streets, opposite the site of the old original Lexington block-house. In the next winter, he recounts, he lectured to about fifty or sixty students, some of whom were from Ohio. Doctors Overton and Blythe, one or both, also lectured in both winters.

This may be said to be the real beginning of the successful career of the Medical Department of Transylvania University, and of that of Doctor Dudley as a medical professor.

The *Kentucky Gazette* of March 10, 1817, contains a card published by a committee of the medical students of Transylvania, signed David J. Ayres, Thomas J. Garden, and Charles H. Warfield, committee of the medical class, headed a "Tribute of Gratitude," in which they return grateful thanks to their professors, Doctors B. W. Dudley, James Overton, and the Reverend Doctor Blythe, for the ability, fidelity, and perseverance with which they had taught them, a further proof that a medical session was held in the Transylvania School in 1816-17.

Many circumstances in these early times favored the establishment of a medical college in Lexington. Not only had that city been recognized for many years as a great center of public education for the whole State, made so by the location in it of the State's University, "Transylvania," but it was also at that time the great metropolis of the West. The country around it, though fast becoming settled and improved by enterprising pioneers, had not as yet been provided with roads or good means of communication with older settlements. To ascend the Ohio River and cross the Alleghany Mountains to Philadelphia, where the only other medical school in this country then existed, was a tedious and laborious undertaking, and not devoid of danger.

On March 2, 1816, one thousand dollars were appropriated by the Trustees of Transylvania and placed in the hands of Doctor Blythe and John D. Clifford for the immediate purchase of chemical apparatus. Doctor Blythe, who had been acting President of the University up to this time, resigned and accepted the position of Professor of Chemistry in the Medical Department.

In 1817, the Medical Faculty was further

reorganized by the appointment of the celebrated, talented Doctor Daniel Drake to the chair of Materia Medica and Medical Botany. The organization was then as follows:

Doctor Benjamin W. Dudley, Professor of Anatomy and Surgery.

Doctor James Overton, Professor of Theory and Practice.

Doctor Daniel Drake, Professor of Materia Medica and Medical Botany.

Doctor William H. Richardson, Professor of Obstetrics, etc.

Doctor James Blythe, Professor of Chemistry, etc.

Doctor Drake has stated that twenty pupils attended this course of lectures, and the de-

and returned to Cincinnati at the end of this session, returning subsequently in 1823 to occupy the same chair, to resign it again in 1827. Professor Richardson did not lecture this session. He, not having yet received the degree of M. D., was allowed to be absent.

DOCTOR SAMUEL BROWN.

By ROBERT PETER, A. M., M. D., Lexington.

The first Medical Professor of Transylvania University and of the great Western country, was born in Augusta, Rockbridge County, Virginia, January 30, 1769, and died near Huntsville, Alabama, January 12, 1830. He was the son of the Reverend John Brown, a



DOCTOR SAMUEL BROWN

1769--1830

gree of M. D., was, for the first time in Lexington, conferred on John Lawson McCullough, of that city.

Each professor lectured three times a week, and his ticket was fifteen dollars. During this session ill feelings arose between Doctors Dudley and Drake, leading to the duel between Doctors Dudley and Richardson already described.

Doctor Drake resigned his professorship

Presbyterian minister of great learning and piety, and Margaret Preston, a woman of remarkable energy of character and vigor of mind, second daughter of John Preston and Elizabeth Patton. He was the third of four distinguished brothers, Honorable John Brown, Honorable James Brown, Doctor Samuel Brown, and Doctor Preston Brown.

After graduating at Carlisle College, Pennsylvania, where he had been sent by his elder

brother, he studied medicine for two years in Edinburgh, Scotland. Doctor Hosack, of New York, and Doctor Ephraim McDowell, of Danville, Kentucky, were of the same class. Returning to the United States, he commenced practice in Bladensburg, but soon removed to Lexington, Kentucky, where he was made Professor of Chemistry, Anatomy, and Surgery in Transylvania University in 1799, as above stated. In 1806, he removed to Fort Adams, Mississippi, where he married Miss Percy, of Alabama. Afterwards, returning to Lexington, he was re-appointed in 1819 to a chair in the Medical Department of Transylvania, that of Theory and Practice. Here he was a distinguished colleague of Professors E. W. Dudley, Charles Caldwell, Daniel Drake, William Richardson, and James Blythe until 1825, when he finally left Kentucky.

Dr. Brown was a man of fine personal appearance and manners; an accomplished scholar, gifted with a natural eloquence and humor that made him one of the most fascinating lecturers of his day. Learned in many branches, he was an enthusiast in his own profession, scrupulous in regard to etiquette, and exceedingly benevolent and liberal of his time and services to the poor.

Although active in scientific pursuits he left no extensive work and but a few detached writings, to perpetuate his fame. His name appears among those of the contributors to the American Philosophical Transactions, and to the medical and scientific periodicals of the day, both in this country and in Europe. In those Transactions and in Bruce's Journal of Mineralogy, he described a remarkably large nitre cavern on Crooked Creek, in Madison County, now Rockcastle County, Kentucky. In this and in a subsequent communication in Volume 1 of *Silliman's Journal* he described the process of nitre manufacture in caves, and gave the best theory of its formation, according to the science of the day. In various other journals he described several interesting cases which occurred in his own practice, and in the renowned *Medical Logic*, by the distinguished Gilbert Blane, of London, Doctor Samuel Brown, of Lexington, is quoted as authority for a certain scientific fact. "To him we are indebted for the first introduction in the West of the Prophylactic use of the cow-pox. As early as 1802 he had vaccinated upwards of five hundred persons, when in New York and Philadelphia physicians were only just making their first experimental attempts. The virus he used was taken from its original source, the teats of the cow, and used in Lexington even before Jenner could gain the confidence of the people of his own country."

A curious anecdote, illustrating progress, was told of Doctor Samuel Brown by his

nephew, the late Orlando Brown, Esquire, of Frankfort, in a letter to the present writer:

"I remember once when talking of calomel, he said he never would forget the first dose of it he gave a patient. It was looked upon as 'the Heracles,' and he used it accordingly. The case was desperate and he resolved to venture upon calomel and give a strong dose. He accordingly weighed out with scrupulous accuracy four grains, gave it to his patient, and sat up all night to watch its effects. The man got well and the Doctor afterwards used calomel more freely."

What would he have thought of the heaping tablespoonful doses, quickly repeated *pro re nata*, or the pound of calomel taken in a day, and survived, which characterized the cholera treatment of one of the later Professors of the Transylvania School?

DR. FREDERICK RIDGELY.*

1756—1824.

By ROBERT PETER, A. M., M. D., Lexington.

Of a well-known family in Maryland, and one of the most celebrated of the early physicians of the West, studied medicine in Delaware, and attended medical lectures in Philadelphia.

He was appointed Surgeon to a rifle corps in Virginia when only nineteen years of age, served in different positions as Surgeon-General in General Wayne's army in 1794, and after that decisive campaign was ended returned to Kentucky in 1799, and was made Professor of Materia Medica, Midwifery, and the Practice of Physic in the same year in the Medical Department of Transylvania University, at the first organization of this department.

Widely known as a successful practitioner and a gentleman of great benevolence, disinterestedness, and affability, he was also one of the medical preceptors of Kentucky's distinguished surgeon, Benjamin W. Dudley, and for many years gave active support to Transylvania University as a member of the Board of Trustees. In 1799-1800, he delivered to the small class of medical students then in attendance a course of public instruction which did him much credit, a fact of peculiar interest, "as it proves him to have been," with his able colleague, Doctor Samuel Brown, "the first who taught medicine by lecture in Western America." He died at the age of sixty-eight at Dayton, Ohio, December 21, 1824.

These first medical professors in Transylvania University were no doubt the first in

*After the most patient inquiry no portrait of this able man, or additional facts in regard to his life and work, could be obtained.

the promotion of medical education in the West. Medical and Law societies were soon established and were in active operation, as we learn from the columns of the *Kentucky Gazette*, published at the time. How many pupils they attracted and taught we can not now definitely ascertain.

In 1801, the meager existing records of the University show a reorganization, in which the Reverend James Moore, who had been replaced in 1799 by a Presbyterian clergyman, the Reverend James Welsh, was restored to the Presidency. "Doctor Frederick Ridgely was made Professor of Medicine, and Doctor Walter Warfield was made Professor of Midwifery, in addition to Doctor Samuel Brown." Doctor Warfield, a physician of Lexington, did not long occupy this chair, and appears not to have lectured in it.

In 1804, the Reverend James Blythe, D. D., of the Presbyterian church, who had been President of Kentucky Academy, was made acting President of Transylvania University, which position he held until 1816. He was subsequently, in 1817, under Doctor Holley's administration, appointed Professor of Chemistry, etc., in the Medical Department. This position he retained until, in 1831, he accepted the Presidency of Hanover College, Indiana.

Doctor Blythe died in 1842, aged seventy-seven, having devoted his life mainly to religion: having been one of the pioneers of the Presbyterian church, in Kentucky. He made no distinguished reputation as a chemical professor in the Medical School, for chemistry in those days had few advocates, but he did good service in the University as a teacher of what was called "Natural Philosophy" in early times.

The Medical College of Transylvania University seems not to have attracted many students in this early period of its history, nor were its means of instruction or its organization complete.

In 1805, Doctor James Fishback, D. D., was made President of the Theory and Practice of Physic in this department. He was characterized as an eloquent, learned, though erratic divine; an able writer; a physician in good practice; an influential lawyer, and an upright man. He was the son of Jacob Fishback, who came to Kentucky from Virginia in 1783.

He resigned this chair in 1806, having given lectures to such small medical classes as were present. In 1808, he was elected Representative to the General Assembly of Kentucky. In 1813, he published "The Philosophy of the Mind in Respect to Religion," and, in 1834, "Essays and Dialogues on the Powers and Susceptibilities of the Human Mind to Religion." He was also preceptor in medicine,

and for a time partner in the practice, of the celebrated surgeon, Benjamin W. Dudley. He died at an advanced age in 1854.

An effort was again made to organize a full Faculty and establish a medical school in Transylvania University in the year 1809, when Doctor Benjamin W. Dudley was appointed to the chair of Anatomy and Physiology, Doctor Elisha Warfield to Surgery and Obstetrics, Joseph Buchanan, A. M., to the Institutes of Medicine, and Doctor James Overton to Materia Medica and Botany. But Doctor Warfield resigned in the same year, and Doctor Buchanan in 1810. The late Lewis Rogers, M. D., of Louisville, thus mentioned Doctor Buchanan in his inaugural address as President of the Kentucky State Medical Society in 1873: "He died in Louisville in 1829: and I call up from the memories of my boyhood with great distinctness his slender form, massive head, and thoughtful, intelligent face. He was a man of great and varied powers of mind. He was a mechanical, medical, and political philosopher. His "spiral" steam boiler, the prototype of the exploding and exploded tubular boiler, and his steam land-carriage were among the wonders of the day. As a physician his papers attracted distinguished notice from the medical savants of Philadelphia, then a center of medical science."

As a political writer he ably discussed the most weighty problems of the times, he being editor of the *Louisville Focus*. Want of concentration of his wonderful mind prevented him from becoming eminent in medicine as in other pursuits which divided his mental powers.

No systematic medical instruction seems to have resulted from this imperfect organization of the Medical School in 1809, although occasional lectures may have been delivered and private instruction given.

Doctor Dudley, after having graduated in medicine in the University of Pennsylvania, visited Europe in 1810, spending four years in Paris and London in the arduous pursuit of medical and surgical information and experience under the celebrated teachers of that day. Returning then to Lexington he began a career as a practical surgeon and teacher, in which his name became distinguished throughout the civilized world.

A MEMOIR OF THE LIFE AND WRITINGS OF DR. BENJAMIN W. DUDLEY.*

By L. P. YANDELL, M. D., Louisville.

The announcement of the death of Dr. B. W. Dudley, though from his great age and increasing infirmities an event not unexpected, will be read with feelings of sadness by every American physician; and educated surgeons in every country will feel, when they read it, that a great light of the profession has gone out. The oldest by many years of all the eminent medical men of the West and South, for

our surgeons has occupied a larger space in the public eye. He achieved indeed a great reputation. He was equally distinguished as a surgeon and as a teacher of surgery. His life and character were in many respects remarkable, and furnish materials for a memoir of extraordinary interest. It would be a pleasure to write a history of his professional career; and one, no doubt, will be written in due time worthy of his fame and services. In the limited space that can be afforded by a journal like this, nothing more can be attempted than a brief notice of the more prominent events and labors of his life.



DOCTOR BENJAMIN W. DUDLEY

1785--1870

a long time the unrivaled surgeon of the Mississippi Valley, one of the founders of the earliest of all our western schools of medicine, he was the last remaining link between the present generation of physicians and that which has passed away with him. If he leaves behind him any superior in the profession of our country, it is certain that no one of all

Dr. Benjamin Winslow Dudley was born of respectable and pious parents in Spottsylvania county, Virginia, on the 12th of April, 1785. His father, the Rev. Ambrose Dudley, long known as a leading Baptist minister in Kentucky, and whose memory is still affectionately cherished in the churches where he labored, removed from Virginia to the neighborhood of Lexington, into what was then called the county of Kentucky, when this gifted son was a year old. In that neighbor-

*Read at a meeting of the State Medical Society at Bowling Green, April, 1870.

hood his long life was passed. He grew up with the beautiful city which was his pride, and of which he was always a favorite son. The opportunities for acquiring an education in Kentucky when he was growing up were limited, and it is not known that he enjoyed any which his own immediate neighborhood could not furnish. If he studied any language but his own at school, it must have been superficially, for he made no pretensions to any knowledge of either Greek, or Latin; and the perfect command of the French which he is known to have possessed he acquired later in life, and principally when he was abroad. He was probably not a student, and it may be that his turn of mind was not literary in early life. But certainly his education was not neglected, and the training which he received was in studies which fitted him well for a life of action. No doubt in subsequent life he often felt painfully the want of those classical attainments which in the public mind are always associated with a professional education. But if he missed the grace of a thorough education, he was saved from the temptation to which scholars are exposed, of wasting upon vain studies those powers to which he devoted with so much success to matters of practice. He had not to regret at the end of his life, with the learned Grotius, that he had consumed it in levities and strenuous inanities.

Medicine being the profession to which his taste inclined him, he was placed by his father, when very young, under the tuition of Dr. Frederick Ridgely, an eminent physician at that time and for many years after in a large practice in Lexington. In the office of this excellent instructor he was not only taught the elements of medicine, but had constant opportunities of becoming acquainted with disease at the bedside. Dr. Dudley always spoke with warmth and esteem of his scholarly and urbane preceptor, as a physician whose high culture of mind and elevated moral tone reflected dignity upon his profession.

In the fall of 1804 he went to Philadelphia to attend medical lectures. He met in the University of Pennsylvania, among the students of that winter, John Estlin Cooke, Daniel Drake and William H. Richardson, names destined afterward to be associated so often and so closely with his own. The coincidence is interesting. Two of these students, like himself, were from the backwoods and felt as he did the disadvantages of a deficient education. Richardson had been reared in his own immediate neighborhood, and had not made himself even an English scholar. Drake by great assiduity had already supplied many of the deficiencies of his early tuition, but knew no language except his own mother-tongue. All became distinguished, and two of the

three who were with him in that class rose to an eminence hardly exceeded by his own. At different times all subsequently were associated with him as colleagues, and two sustained to him, at a later period, the relation of strenuous competitors in rival medical schools. But whether working harmoniously together in the same institution, or striving to build up rival schools, all were engaged in shaping the profession of medicine in the frontier states, and will always hold a place among the most useful and honored of its pioneers.

In the interval between the lectures, from April to October, Dr. Dudley engaged in practice with Dr. Fishback, a distinguished physician of Lexington. At the close of his second course in the University of Pennsylvania he took the degree of M. D., near the end of March, 1806, just two weeks before he was twenty-one years old. Then returning to Lexington, which had now become a town of note, and was indeed the literary and commercial emporium of the West, he became again a candidate for practice. But he seems not to have entered heartily into the business. He was not satisfied with his professional attainments. His ambition was fired by his associations in Philadelphia. He was resolved to qualify himself for the highest position in his profession. And this, he thought, could only be done by studying in the hospitals and under the great teachers of Europe. His energies were all directed to the accomplishment of this end, and with the view of acquiring the requisite means he added some commercial business to the practice of physic. On some adventure connected with trade he went to New Orleans in a flatboat about the year 1810. There he bought a cargo of flour with which some time in that year he sailed to Gibraltar. Disposing of his cargo advantageously at that point and at Lisbon, he made his way through Spain to Paris.

He remained nearly four years in Europe, and the larger portion of that time was spent in the French capital. Its vast hospitals and dissecting-rooms afforded the facilities he was in quest of. His mind craved a knowledge of facts; and though the fame of the great surgeons of London and Paris had inflamed his ambition, it was things he had gone abroad to see and learn. Diseases in their varied phenomena and aspects, operations on the living subject, the minute structure of the human body, these were the objects of his study. Paris furnished them in amplest measure, and on the most liberal terms; and it was in Paris undoubtedly that he gained that perfect knowledge of anatomy and that familiarity with surgical operations which laid the foundation of his success as a surgeon. But though acquiring most of the knowledge which awaited him in future years through the institutions of Paris, it was for the surgeons of

London that he habitually expressed the highest admiration, Baron Larrey perhaps excepted. They certainly of all his teachers had the largest share in shaping his opinions and molding his professional character. In manners he came home a Frenchman, but in medical doctrine and practice he was thoroughly English. It was impossible that he should not admire the great military surgeon of France, and be captivated by the recital of his wonderful experience. The memoirs of this extraordinary man furnished him indeed with numberless incidents which he afterward added to the dramatic interest of his own surgical lectures. But it was Abernathy who impressed him as the leading surgeon of Europe. Sir Astley Cooper was his beau ideal of an operator, but Abernathy he always quoted as the highest authority on all points relating to surgery, as at once the observant student of nature, the profound thinker, and the sound medical philosopher.

The years embraced in Dr. Dudley's stay in Europe belong to one of the most eventful periods in the history of France, a period as favorable as could be for the study of that branch of his profession to which he was specially devoting himself. How wisely he improved those fine opportunities is best attested by the perfect mastery of his profession which he afterward exhibited in all the emergencies of practice.

It was while pursuing his studies in Paris that Napoleon set on foot his gigantic Russian campaign. Having made the acquaintance of Caulaincourt, the Emperor's trusted minister, he was admitted to the chamber of deputies on the occasion of Napoleon's appearing before that body at the close of his disastrous expedition. The writer has often heard him describe the scene as the most impressive that he had ever witnessed. The Emperor's address was brief—"The Grand Army of the Empire is Annihilated." These were the terrible words with which he commenced it.

In the summer of 1814 he returned to his old home at Lexington. He returned with high aspirations, and with a consciousness of superiority given by his advantages. There was now no longer any hesitation in his movements or diversion of his mind from medicine by foreign pursuits. His profession had become the engrossing object of his thoughts, and from that time on until age made it necessary for him to relax his labors, he applied himself to it with undeviating fidelity. I am sure I have never known a physician who made himself more a slave to his profession. He had no holidays. He sought no recreation: no sports interested him. If his friends prevailed on him to quit the city on a trip of pleasure, he returned to his business rather wearied than refreshed by the excursion. His

thoughts, he has been heard to say, were always on the cases he had left behind, and not on the objects or the amusements around him.

Such devotion had not long to wait for its reward. But, apart from this faithful application to business, there were other circumstances which rendered the time of his return peculiarly auspicious to his success. Great as were the western states at that day, and growing, as they were, daily greater, they were still without a surgeon of note, and without a medical school. Students of medicine had then to cross the mountains, or practice without a diploma on the knowledge derived from attendance on lectures. Dr. Dudley soon gave assurance of his ability to meet both of these public wants. With his consummate knowledge of anatomy, and the skill he had attained in the use of the knife, he was not long in acquiring national reputation as a surgeon; and when, a short time after his return, the project of reviving a school of medicine began to be agitated, public opinion pointed at once to him as its head. Added to these influences, which gave him early distinction, another circumstance favored his immediate introduction into practice. He found a disease presenting some strange features prevailing in the country when he reached home. Traces of the typhoid pneumonia which had just swept across the continent were to be seen everywhere in Kentucky. The fatal epidemic had given place to a bilious fever, characterized, like the plague, by a tendency to local affections. Abscess formed among the muscles of the body, legs, and arms, and were so intractable that limbs were sometimes amputated to get rid of the evil. Arriving in the midst of so alarming an epidemic, Dr. Dudley was not long without calls. His attention while abroad had been specially directed to the bandage as an agent, among other things, for controlling ulcers of the extremities. It at once occurred to him that this appliance was adapted to the treatment of the burrowing abscesses with which he was continually meeting. The efficiency of the bandage, now recognized by every surgeon, was at that time not fully understood. Dr. Dudley's success with it in these cases was striking, and from its novelty, as well as its efficacy, his practice drew upon him general attention.

In 1817, three years after his return to Lexington, the Board of Trustees of Transylvania University determined to re-organize the medical department of that institution, then the leading college in the West. Dr. Dudley was made professor of anatomy and surgery, and two of his fellow students of 1805 were associated with him, Dr. Drake in the chair of materia medica, and Dr. Richardson in that of obstetrics. Dr. James Overton was elected professor of theory and practice of medicine,

and to the Rev. James Blythe, D. D., was assigned the chair of chemistry. A small class of medical students encouraged the enterprise, and at the close of the session one of the number, W. L. Sutton, of Georgetown, afterward a distinguished physician of Kentucky, was admitted to the doctorate. The beginning was regarded as favorable, but before the winter was over misunderstandings occurred among the members of the faculty, and the feuds resulted in its disruption. Drake went back to Cincinnati to inaugurate measures for establishing a medical school in that rising city, and Overton, disgusted with medical politics, removed to Nashville. Bitter animosities, some sharp pamphleteering, and a duel between Dr. Dudley and Dr. Richardson ensued, in which the latter received a pistol shot in the thigh. No attempt was made that year to carry on the department, but the year following a new faculty was organized, with Dr. Dudley in his former chair, and Dr. Richardson and Dr. Blythe again as two of his colleagues. To these were added Dr. Charles Caldwell and Dr. Samuel Brown, the former in the institutes of medicine, the latter in theory and practice, and both widely known to the profession.

It should be remarked, as a fact creditable to Dr. Dudley, that in the reconstruction of the faculty he made no objections to serving with a gentleman with whom a little while before he had had a hostile meeting; and that a few years later he united with his colleagues in an invitation to Dr. Drake to return to the school, though that gentleman in a public controversy with him had written much that it was not easy to forgive. The fact shows that he was both magnanimous and wise. He was able to rise superior to the prejudices which personal bickerings engender, and gave his voice for the men who had the greatest fitness for the places, regardless of their social relations to him.

Dr. Dudley had in the faculty as now constituted some colleagues who were worthy of him. Caldwell and Brown, gifted and learned, ripe in their powers, both of the most imposing presence and already known to fame, were just the men to cooperate with him in his enterprise. Caldwell especially had the qualities of mind and temper to render the infant school the most important services. To his varied learning and uncommon eloquence he added boldness and energy, and a devotion which never waned or wavered. All his time, all his gifts as a writer and a speaker, were fully and enthusiastically devoted to the institution.

The Transylvania Medical School under this organization grew apace. In the number of its pupils, it began in a few years to vie with the older schools on our Atlantic border. The ability of its faculty could not be ques-

tioned. Its alumni showed themselves to be equal in attainments and professional skill to the graduates of the oldest institutions. It took rank in a little while with the schools of Baltimore, New York and Philadelphia; and the reputation of Dr. Dudley rose with it. His admiring pupils bore to every part of the country reports of his surgical skill and of his powers as a teacher. Unquestionably from the beginning he was in their estimation the foremost man in the faculty. Drake entered it in the fifth year of the school, when its success had become assured, and he brought to it a brilliant reputation. But Dudley's preeminence continued undisturbed. Students doubtless there were not a few who would have declared for other professors, who took more interest in other lectures than his, but the great body of the class he had always with him. To him they always hurried, however listlessly they may have repaired to other teachers; and whatever other rooms were deserted his amphitheater was always full.

Why, it is natural to ask, was this ascendancy? What was the source of that superior influence which he so long exerted? It will not be claimed, I think, by his most ardent admirers that he was intellectually superior to all his colleagues. Nay, he was the readiest himself to admit, as I myself know, that in point of mental endowments several of his associates had the advantage of him. There were with him in the faculty at all times men who surpassed him in all the qualities that go to form the popular lecturer. Caldwell was far more brilliant and eloquent, besides being a profound scholar. Brown was superior to him in voice and person, in versatility of mind, and in depth and variety of learning. Drake exceeded him in elocution, in earnestness, in the extent of his attainments, and in grasp of mind. He laid no claims indeed to oratorical powers or to professional erudition. He was not a logician, he was not brilliant, and he had neither humor nor wit. And yet in ability to enchain the attention of students, to impress them with the value of his instruction and his greatness as a teacher, he bore off the palm from all the gifted men who at various periods taught by his side. By common consent he stood as an instructor among the foremost of them *facile princeps*.

This was partly due undoubtedly to the department of medicine taught by him. There is, as all medical teachers well know, an inherent charm about surgery for medical students, a dramatic interest in the cases of the surgeon, an *eclat* about his operations which is found in no other branch of art. Something is also to be set down to his holding two professorships. This had its effect upon the imagination of students. But all this is far from accounting for the superiority which he maintained so long in the midst of such com-

petition. The true explanation of the fact is to be found, I think, in the perfect devotion of his life to one pursuit. Choosing this wisely with reference both to his own aptitudes and its dignity, he concentrated upon it all the powers of his mind and made himself a master in it. All other studies he neglected. To all pleasure that would draw him away from it he turned a deaf ear. Cool, quick, calm, decisive, with a sound judgment and a steady hand, he had all the attributes of a great surgeon, and he improved them by severe application. In point of skill he rose to an eminence which no one around him approached. Patients came to him from afar

oracular, conveying the idea always that the mind of the speaker was troubled with no doubts. His deportment before his classes was such as further to enhance his standing. He was always in the presence of his students not the model teacher only, but the dignified urbane gentleman; conciliating regard by his gentleness, but repelling any approach to familiarity; and never, for the sake of raising a laugh, or eliciting a little momentary applause, descending to coarseness in expression or thought. That is, to his pupils he was always and everywhere great.

The medical school at Lexington, owing to the influence of his great name more than to



"FAIRLAWN", THE HOME OF DR. DUDLEY, NEAR LEXINGTON.

The outbuilding marked with a cross is the one in which he taught, gave demonstrations and made dissections, when the University Buildings were not available. In renovating this building recently Dr. Barkley informs me that four skeletons, evidently left over from cadavers, were found in a basement, probably unused since Dudley gave up teaching more than half a century ago.

because it was believed that he did what others could do better than any one else, and that he did much no one else in reach could do. Students looked up to him as an operator who had distanced competition, and a teacher who gave them not what was in the books, but much that the writers of books had never understood. Like John Hunter, he rather prided himself on his independence of authorities, and this increased the admiration of his pupils. They listened to his words as those of a master who drew continually upon the stores of his own ample experience, and not upon the teachings of others. They were persuaded that there was much they must learn from his lips or learn not at all.

His manner as a lecturer was singularly imposing and impressive. It was magisterial,

any other cause, flourished for more than twenty years. But he was painfully aware that it was beset by difficulties which must ultimately cause its decline. He often alluded mournfully to these circumstances in conversation with his colleagues; and when the effort was made, in 1837, to transfer the school to Louisville, it was expected that he would favor the measure. But he decided otherwise. His attachment to Lexington, where he had been brought up and was surrounded by such troops of friends, overbore all considerations of policy, and he remained with the school, on the spot where they had risen together. His last course of lectures was delivered in 1849.

In some respects Dr. Dudley, as a practitioner, was in advance of his age. He con-

damned blood-letting, and used to say that a man's life was shortened a year for every bleeding. On this point he was up with those of our day who are the most ultra. His use of the trephine in epilepsy and his treatment of fungus cerebri were original. The bandage in his hands assumed an importance not dreamed of in our country before his time. His views on many surgical subjects were peculiar, and he adopted novel methods in the cure of other affections which have since been sanctioned by general experience. But at his practice in another and a large class of affections the physician of modern times stands aghast. To "puke and purge, purge and puke," as he advised, day after day, for weeks and months together, in tubercular diseases, affections of the hip-joint, spine, etc., all the while restricting patients to a diet of skimmed milk and stale bread, or a few half pints of water gruel, would be, as we regard it, to conspire with the disease against the life of the patient. And yet if Dr. Dudley was not a successful practitioner he was greatly deceived, and the public was sadly deceived with him. Unquestionably he had the reputation of success, and he was himself fully persuaded that he was making cures all his life, by his energetic practice, of diseases which are esteemed the most unmanageable.

Dr. Dudley's reputation as a surgeon rests chiefly upon his operations for stone in the bladder, in which he succeeded better than all other surgeons of the world, either of our own or of former times. He performed lithotomy in the course of his life two hundred and twenty-five times, and it was not until after about his hundredth case that he lost his first patient as a result of the operation. This success, it is believed, is unparalleled. He never adopted lithotrity, but performed the lateral operation, and to the last adhered to the gorget for making the incision into the bladder, and preferred an instrument rather under than over size, regarding the danger from contusion of the parts in extracting a large calculus as less than that of hemorrhage from a free incision. He was an expert operator but rather cautious than bold, and conservative rather than adventurous; not inclining at all to operate in doubtful cases. His confidence was great in the constitutional treatment of patients about to be submitted to the knife, and his remarkable success he always attributed more to the care with which he prepared his subjects for operations than to his superior skill in operating.

It was not until Dr. Dudley had been many years a leading teacher that he became known as a writer. It is doubtful in fact whether he would ever have written at all but for the appearance of a journal of medicine under the auspices of Transylvania University. He had no taste for writing, and but little leisure for it.

The Transylvania Journal of Medicine was issued on the 1st of February, 1828, edited by Professors Cooke and Short, and through their influence Dr. Dudley was induced to prepare a paper on injuries of the head. This remarkable paper forms the first article in the first number of that journal. Seldom has an article appeared in modern times setting forth more original views. By a number of cases he showed that epilepsy is frequently caused by pressure on the brain, resulting from fractures of the cranium, and is curable by trephining. Five epileptics were operated upon, and three out of the five were relieved, and the other two were much benefited by the operation. Spicula of bone in some instances were found growing from the seat of the fracture and penetrating far into the brain. The sense of relief experienced by some of the patients was immediate and in some of them there was no recurrence of the convulsions after the bone was removed. Dr. Dudley always and justly referred to his operation of trephining for epilepsy as constituting a new era in surgery.

But another lesson of the greatest value was communicated in this paper, in illustration of which other striking cases are reported. They relate to the treatment of *fungus cerebri*. In one of his cases a brick-mason had his head extensively fractured by a piece of falling timber. The depression was so great that the surgeon thought he might have buried his forearm in the cranium. At the conclusion of the third week a fungus of frightful magnitude was detected growing up from the brain. For this formidable growth Dr. Dudley adopted graduated pressure. Dry sponge was placed on the fungus, and bound as close as the feelings of the patient would permit. By imbibing moisture the sponge exerted a gradually increased pressure. On removing the dressings he had satisfactory evidence of the efficacy of the remedy, but it was discovered that the fungus had shot branches into the sponge. To prevent this subsequently a piece of thin muslin was interposed, and the patient recovered fully. And, what was remarkable, he showed on recovery a decided increase of intellect, which continued, however, for only a few years. In the end he became epileptic, and thirteen years after receiving the injury was nearly fatuous. Dr. Dudley, in connection with this case, remarks that he had cured *fungus cerebri* by the use of dry sponge in five days.

His second paper appeared in the following number of the same journal. The subject is hydrocele, in which he proposed a new operation: a free incision into the tunica vaginalis, the introduction of a tent, and excision of the preternatural sac, if one is found to exist. In the fourth number he commenced an elaborate article on the bandage, which is continu-

ed through three successive numbers. In the fifth volume he reports another case of epilepsy successfully treated by the trephine. His next paper appeared in the ninth volume, and treats of fractures, in the management of which he shows the great utility of the bandage. His last paper was on the nature and treatment of calculous diseases, and was published in the same volume of that journal. It is rich in details most interesting to the surgeon. In his first case he found it necessary to apply a ligature to the transverse perineal

was executed before anyone else present had remarked the difficulty.

This is the sum of Dr. Dudley's contributions to medical literature. He meditated other papers, but never found time to prepare them. It was once said of him by a colleague, who greatly admired him both as a surgeon and as a teacher, that "his Hippocrene soon ran dry." From the turn of his mind and the nature of his studies this was necessarily so. He wrote only on subjects purely practical; and where his experience ceased, there he stop-



THE DUDLEY GRAVES.

artery, on account of its unusual size. Of one hundred and forty-five patients who, up to the time at which he wrote, had applied to him, he operated upon all but ten. In one case, when his patient was on the table before his class and some of his colleagues, he discovered that his accustomed operation was impracticable from deformity of the pelvis, and while his assistants were taking their positions resolved to make the external incision transverse, which

ped. But if the stream which flowed from his pen was not an abounding river, it was a Vauclusa fountain which has arrested the attention of surgeons everywhere, and by the banks of which students of surgery still love to linger.

Dr. Dudley was married on the 9th of June, 1821, to Miss Anna Marie Short, daughter of Major Peyton Short, and sister of the late Prof. Charles W. Short. This estimable lady died young, leaving him two sons and a

daughter: the present Dr. Wilkins Dudley, W. A. Dudley, Esq., and Mrs. Anna Tilford. He never married a second time. In the summer of 1848 he removed to Fairlawn, his beautiful country residence near Lexington, and gradually withdrew from the practice of his profession. He delivered his last lecture in February, 1850, and the last entry on his books bears date April 28, 1853. He was consulted often afterward by his professional brethren, but from that time forward he never treated any patient of his own. His death took place on Thursday, the 20th day of January, 1870, in the eighty-fifth year of his age.

The life of this distinguished and useful man was extended far beyond the term allotted to those who commenced life with him and were his closest friends. Of the surgeons who competed with him in early manhood, and of all those who were associated with him as teachers in the earlier organizations to which he belonged, not one now remains. He was permitted to linger on amid the scenes which had witnessed his triumphs for eighteen years after the last one of those who had officiated with him in the first medical faculty of which he was a member had passed away, and for a quarter of a century after most of his old associates were gone. His beneficent life had surrounded him by hosts of friends. In his prime he had wisely provided for an old age of infirmity, and his declining years were solaced by all the comforts that wealth and affection can supply.

DR. DANIEL DRAKE.

By HENRY A. COTTELL, A.M., M.D., Louisville

One of the foremost among the worthies sketched in these biographies is Dr. Daniel Drake, scholar, orator, writer, politician, and promoter; a genius in the initiative, a master in the executive, and "a problem in physical and mental dynamics." Dr. Samuel D. Gross who knew him well as friend and colleague thus pictures him: "No one could approach him or be in his presence without feeling that he was in contact with a man of superior intellect and acquirements. His features, remarkably regular, were indicative of manly beauty, and were lighted up by blue eyes of wonderful power and penetration. His forehead was high, well fashioned, and strongly denotive of intellect. The nose was prominent, but not too large. His voice was remarkably clear and distinct.

"The life of Dr. Drake was eminently eventful. No man that our profession has yet produced has led so diversified a career. He was, probably, connected with more medical schools than any individual that ever lived. It is rare that physicians interest themselves in so many public and professional enter-

prises as he did. His mind was of unlimited application. His own profession, which he served so well and so faithfully, was incapable of restraining it; every now and then it overlapped these boundaries, and wandered off into other spheres. His career, in this respect, affords a remarkable contrast with that of medical men generally, whose pursuits furnish few incidents of public interest or importance. His mission to his profession and to his age was a bright and happy one. No American physician has performed his part better, or left a richer savor along his life-track.

"But his life was not only eventful; it was also eminently laborious. No medical man ever worked harder, or more diligently and faithfully; his industry was untiring, his perseverance unceasing. It was to this element of his character, blended with the intensity we have described, that he was indebted for the success which so pre-eminently distinguished him from his professional contemporaries. He had genius, it is true, and genius of a high order, but without industry and perseverance it would have availed him little in the accomplishment of the great aims and objects of his life. He seemed to be early impressed with the truth of the remark of Seneca: *'Non est ad astra mollis a terris via.'* He felt that he did not belong to that fortunate class of beings whose peculiar privilege it is to perform great enterprises without labor, and to achieve great ends without means. His habits of industry, formed in early boyhood, before, perhaps, he ever dreamed of the destiny that was awaiting him, forsook him only with his existence. The great defect in his character was restlessness growing apparently, out of his ardent and impulsive temperament, which never permitted him to pursue any subject very long without becoming tired of it, or panting for change. His mind required diversity of food. Hence, while engaged in the composition of his great work, he could not resist the frequent temptations that presented themselves to divert him from his labors. His delight was to appear before the public, to deliver a temperance address, to preside at a public meeting, or to make a speech on the subject of internal improvement, or the Bible or missionary cause. For a similar reason he stepped out of his way to write his letters on slavery, and his discourses before the Cincinnati Medical Library Association. No man in our land could have done these things better, few, indeed, so well; but, useful as they are, it is to be regretted that he undertook them because they occupied much of his time that might, and, in the opinion of his friends, ought to have been devoted to the composition and completion of his great work, the ultimate aim and object of his ambition. Like Adam Clarke, he seemed to think that a man

could not have too many irons in the fire, and consequence was that he generally had the tongs, shovel, and poker all in at the same time.

"It was the same restless feeling that caused his frequent resignations from medical institutions. Had his disposition been more calm and patient, he would have been satisfied to identify himself with one medical school, and to labor zealously for its permanency and renown. In moving about so frequently, he induced people to believe that he was a quarrelsome man, who could not agree with his colleagues, and whose ruling passion was to be a kind of autocrat in every medical

Principal Diseases of the Interior Valley of North America," a work which, comprehensive in scope, philosophic in spirit, and abounding in graphic pictures of disease, will remain a storehouse of knowledge and a monument to the originality of its gifted and versatile author. He said to the speaker when he was about to enter on the practice of his profession: 'I have never seen a great and permanent practice the foundations of which were not laid in the hearts of the poor. Therefore, cultivate the poor. If you need another though a sordid reason, the poor of to-day are the rich of to-morrow in this country. The



DOCTOR DANIEL DRAKE

1785--1852

faculty with which he was connected. But, while his own conduct gave color to such an idea, nothing could have been more untrue."

Dr. D. W. Yandell, who sat at his feet in student days, speaks of him thus: "As a lecturer Dr. Drake had few equals. He was never dull. His was an alert and masculine mind. His words were full of vitality. His manner was earnest and impressive. His eloquence was fervid. While connected with the University he composed his work upon "The

poor will be the most grateful of all your patients. Lend an ear to all their calls'."

Dr. Drake was the son of Isaac Drake and Elizabeth Shotwell, and was born in Essex County, New Jersey, October 30th, 1785. When Daniel was two and one-half years old his father moved his family to Mayslick, Mason County, Kentucky. Here a log cabin was built after the manner of pioneers. In this rude hut and another of similar architecture on the Lexington road, the boy lived until he

was 15 years of age, when he went to Cincinnati, then holding only a thousand souls, and began the study of medicine under Dr. William Goforth. Here he read Quincy's Dispensatory, and ground quick-silver for mercurial ointment. Years afterward he facetiously said that "the latter was much the easier task of the two." After studying and working for a term of five years, he was given an autograph diploma by his preceptor. As there was in that day no medical school West of the Alleghanies, and as Ohio was not then a state, this act was doubtless legal and authoritative. On this diploma he practiced for eleven years when, at a Commencement held for the purpose, by the University of Pennsylvania, Drake was honored by having the Doctorate degree of that school conferred upon him. Of this action, Dr. Joseph Ranshoff says, "It was a function thereunto without precedent, and to my knowledge never repeated, but the excellence of his thesis, together with the contributions he had already made to science, justified the faculty in this signal distinction." What a compliment to a young backwoodsman of 31 years.

His first visit to Philadelphia was in 1805. He spent the year 1806 in Kentucky. In 1807, at the age of twenty-two, he married Harriet Sisson, age twenty years, of New Haven, Connecticut, with whom he lived happily till her death a quarter of a century later. Of this, years after, he wrote: "We began the world in love, and hope and poverty." His children numbered five, and his domestic life, save in the death of two infants, was unclouded. From the biographical sketch published by his son, Chas. D. Drake, in 1860, we quote the following beautiful tribute to his wife. It is not only a testimonial to his domestic felicity; but will give the reader a fine example of Drake's literary force and style.

"We lived together, not merely at home, and in the houses and society of our friends, but frequently, as far as possible, in conjunction, all places of rational curiosity, of improvement, and of innocent and attractive amusement. On such occasions, her observations were always just, instructive, and piquant. I relied upon her taste and judgment; I adopted her approval; I submitted my own impressions to her decision; I was gratified in proportion as she approved and enjoyed. A more devoted mother never lived. The love of her offspring was at once a passion and a principle. After her husband, all her solicitude, her ambition, and her vanity were for her children. She loved them tenderly, she loved them practically, but she loved them without discretion, and was jealous of whatever could impair their qualities, manners, or physical constitution. Her tenderness was without folly, her care without sickliness. Her af-

fection begat vigilance, and modified the indulgence which maternal love too often sanctions, to the ruin of its object. She loved her children, but she also respected virtue, intelligence, modesty, industry, accomplishments and honest distinction. She loved them as candidates for excellence. Hence her affections were chastened with severity, and the greater her attachment the more intense her desire to reserve the subject of it from folly, vulgarity, and vice. Her care rose with her love, and her corrections multiplied with her admiration."

In 1817 he was called to the chair of *Materia Medica* in Transylvania University, Lexington, Kentucky. He taught for one session only here; then went to Cincinnati where he made plans for a literary and scientific college, a medical school and a hospital, and obtained from the Legislature, a charter for each of these institutions. Thus was established beside the first named, the Medical College of Ohio, and the Commercial Hospital, in which Drake took the initiative. The College has been for more than 90 years one of the great medical schools of the West, while the hospital was destined to become one of the first marine hospitals of the United States. In 1823 he returned to Transylvania and resumed his work as professor of *Materia Medica*, being later transferred to the chair of practice, which he held till 1827. Jefferson Medical College Philadelphia, called him to the chair of Practice in 1830. Spending one year only in Philadelphia, he returned to Cincinnati and founded a Medical Department to Miami University, which, before the opening of the first session, united with the Medical College of Ohio. Being dissatisfied with the subordinate position there given him, he retired to private life. His restless ambition could not long brook the obscurity of retirement, and we find him in 1835 establishing the Medical Department of the Cincinnati College. Assuming the deanship he called to his aid an able faculty, of which the great Samuel D. Gross, destined to become his life long friend, became a member. This school was short lived, and Drake, taking Gross with him went to Louisville, the former being assigned to the chair of Clinical Medicine and Pathological Anatomy, and the latter to the chair of Surgery, in the University of Louisville. In 1844, he was transferred to the chair of Practice of Medicine which he held till 1849, when he resigned and returned to Cincinnati; having been reappointed to the chair of Practice in the Medical College of Ohio. In 1850, in consequence of a college broil, he resigned his professorship. He was recalled to Louisville, and resumed the chair of Practice in the University, in the year 1851-52. The Medical College of Ohio being reorganized, Drake went back

to Cincinnati to occupy the chair he had vacated two years before. But the hand of death was upon him, and after seeing the opening of the session he paid the mortal debt on November 5th, 1852. He was literally worn out by prodigious labor; says Prof. Ransohoff: "It would be beyond reason on an occasion like this to touch upon every activity of so versatile a man as Drake, and one can only touch upon the chief of the many radiating ways travelled by the influence of this master mind. And of them, next to that of his written work, was that of the lecture room. Drake loved to teach, and because he loved it, did it well. During thirty-five years, he held nine professorships, in five different schools. A restlessness innate in his make-up and an habitual discontent with his professional environment made him an itinerant in medicine. The longest continuous professorship, ten years, he held at Louisville."

Besides this he was constantly promoting secular and civil schemes, establishing non-medical institutions for the upbuilding of his chosen city, Cincinnati owing more to him than to any dozen others of her pioneers, projecting schemes for a great railroad, the Cincinnati Southern, promoting and establishing philanthropic and religious institutions, editing journals, scientific and medical, and writing a library of books dealing with every phase of thought and enterprise, besides lectures, pamphlets, maps and brochures. His one great work, the huge volume on "The Principal Diseases of the Interior Valley of North America," rivals Gibbon's Decline and Fall of the Roman Empire, in the scholarship, study, and research demanded of its author, to say nothing of the mechanical labor of writing it down. Such a record spells genius, and enough of his work lives after him to secure immortality to his name. He had his faults, doubtless, but he was without a vice, chaste, virtuous and clean in body, soul and mind. A character so noble outshines the luster of his genius and will stand forever the highest testimonial to culture, and to the glory of medicine.

JOHN ESTIN COOKE.

By HENRY A. COTTELL, M. D., Louisville.

"The beloved physician," was the decoration worn by St. Luke in the Apostolic College, and countless thousands of doctors since his day have won the title through devotion to the well being of their fellows, in the tender ministrations of their calling, and worn it gracefully, and modestly. But among the eminent teachers of Transylvania and the University of Louisville there was none to whom the decoration could be more appropriately applied than John Estin Cooke. Of him Dr.

Lunsford P. Yandell, Sr., wrote, "Dr. Cooke was one of the few men who might have been safely trusted to write his autobiography. He would have reviewed his career with a truthfulness, a modesty, a candor that would have exalted his character in the eyes of men. His works will be read by the curious for a long time to come, and will always be read with advantage by the earnest student."

John Estin Cooke, son of Stephen Cooke, a Virginia physician who had served as surgeon in the war of the Revolution, was born in Boston, Mass., March 2, 1783. His parents were on a visit to that town at that time. He studied medicine with his father, and acquired the doctorate at the University of Pennsylvania in 1805. He began practice in Warrenton, Fauquier County, Virginia, and after a sojourn in that place of about six years moved to Winchester. While in this place, his ambition showed itself in an effort, with a Dr. McGuire, to organize a medical school. In 1827 he was called to the chair of theory and practice of medicine in Transylvania University, succeeding Dr. Daniel Drake, who strongly opposed his doctrines. He wrote an article on Autumnal Fever, published in the *Medical Record* in 1824. This attracted public attention, and led to his call to Transylvania. A "Treatise of Pathology and Therapeutics," published in two octavo volumes of 540 pages each, was the first systematic work issued by a professor of Transylvania. A third volume was promised. It never appeared; but essays subsequently published amounted practically to another volume. In the first year of his professorship he was made co-editor, with Chas. Wilkins Short, of the *Transylvania Journal of Medicine and the Allied Sciences*, a journal issued by the medical faculty of Transylvania University. Through this medium, Cooke and Charles Caldwell were the advocates and defenders of the false doctrines and theories then in vogue, and inventing not a few others, which powerfully influenced medical thought not only throughout the Southwest, but almost the civilized world over.

In 1837 Cooke was called to Louisville and was given the chair of Theory and Practice of Medicine in the Medical Institute there out of which came the University of Louisville. Cooke was by this act one of the founders of that great school. The theory which made him famous was elaborated during his long rides as a country doctor in Virginia. It is thus succinctly stated by his colleagues of old Transylvania, Dr. Robert Peter, "His fame was mainly built on his celebrated theory of the universal origin of disease, which was, that disease was caused by cold or malaria. That especially it commenced in weakened action of the heart, resulting in congestion of the vena cava, its branches and capillary dis-

tribution, and that fever was but the reaction of the vital force to overcome this condition, which unrelieved would result in death. According to him, all autumnal and malarial fevers were but variations of one diseased condition; and even those fearful scourges the plague, cholera, yellow fever, dysentery, etc., were simply varied forms and conditions of congestion of the vena cava."

To destroy this many-headed hydra, while he would use cold water to reduce too great febrile excitement and even sometimes give

repeated *pro re nata*; actually giving one pound in one day to a young patient, without fatal result." *O tempora! O mores!*

Two survivals of Cooke's theory and practice are in the mind of the writer; when he was a student in the University of Louisville Dr. Lunsford P. Yandell, Jr., (1870-71-72) then professor of Materia Medica, Therapeutics, and Dermatology, evolved a theory of the malarial origin of all diseases except syphilis and tuberculosis. He excused the vena cava and brought into play more correctly and sci-



DOCTOR JOHN ESTEN COOKE

1783--1853

antimonial wine, his main reliance was on blood-letting and cholagogue purgatives; as he believed it was by increasing the secretion of the liver and causing it to pour out constant "black bile" that the venous congestion was to be relieved and the patient cured.

Among all these remedies calomel was his chief reliance, and was given by him in doses not measured by the balance but by the effect they produced; so that in the latter days of his practice, notably during the epidemic of cholera in Lexington in 1833, he absolutely resorted to tablespoonful doses of this mercurial,

entifically the portal circulation, and, working out the pathological features of the theory to his own satisfaction, prescribed quinine for every disease, except tuberculosis and syphilis, that he was called upon to treat. The writer recalls a case of acute diffused acne, involving almost the entire cutaneous surface of the patient's body. Yandell looked the patient over carefully and said: "this looks like syphilitic acne, but I believe it is malarial, give her quinine in ten grain doses three times a day." I complied, and had the pleasure of

seeing the patient cured in less than two weeks' time.

The instance of the survival of Cooke's practice, was exhibited by a young doctor who some fifteen years ago, came to Louisville from the heart of the Blue Grass, and was the conservator of Transylvania tradition so far that he horrified his medical friends and fellows of our local medical societies by advocating teaspoonful doses of calomel in the treatment of bilious and other fevers.

But the glory and fame of Cooke is a strangely negative one. Of this Dr. David W. Yandell in his Semi-Centennial Doctorate address at the University of Louisville, tells the story. "Dr. Cooke, reading from his desk in Louisville, saw in bile, yellow bile, and black bile, the hands on the dial-plate of disease which pointed unerringly to the one and only treatment. The three biles constituted his medical trinity, and appealing to this he compressed his means of cure into one drug, and that drug was calomel. This he gave in huge doses, by day and by night, in season and out of season, first, last, and all the time."

But a pathology so narrow could not long survive, and a practice which trusted the awful issues of life and death to a single agent failed to satisfy the growing intelligence of the people. Physicians at large assailed the pathology. The public rejected the practice. And, as extremes do so often meet, there grew up with this such strong opposition, that, out of it came a sect which condemned as poisons all medicines derived from the mineral world, and found in the vegetable kingdom alone their remedial agents. This sect called itself Eclectic. It was founded by Samuel Thompson, a man of much mother-wit, great shrewdness, and but little knowledge, and for a time it held large sway throughout the country. The sovereign metal of Dr. Cooke was driven from the field by steam, lobelia, and number six. But if it were permitted this ingenious, original man, to look down upon the practice of to-day, he would have the satisfaction of seeing the remedy on which he rested all his hopes come out bravely from the eclipse which temporarily obscured it. His pathology, essentially bad, naturally perished. The remedy he advocated, essentially good, as naturally survived and, under wiser restrictions, a more correct pathology, and enlightened interpretation of its action, is at present in more general use than at any previous time in the history of the world. Eclecticism, too, has perished; another proof that "what is useful will last, what is useless will sink."

In testimony of the above who has not heard and is not to-day hearing people talk of Cooke's pills? The formula of that famous creation is for each pill, calomel gr. 1-2, aloes and rhubarb aa gr. j, soap gr. 1-2. What a letting down from the dosage prescribed by

the master in his prime. To reach anything like Cooke's original dosage of calomel, through these pills, the patient would be compelled to take not less than a peck of them.

The winning features of Cooke's character were, earnestness, sincerity, devotion, love, charity, and piety.

Collins, the historian, tells this story illustrating the depth of his convictions. "One Sunday morning, waiting on some of his family to get ready for church, the Methodist church, of which he and they were members, he picked up a discourse by the Reverend Doctor Chapman, then an Episcopal clergyman of Lexington. The argument for the Old Church of England attracted his attention. He perused and studied it fully, sent for all the available authorities on the subject; studied them with such effect that at once he changed his communion to the Episcopal Church and was ever after a rigid and zealous pillar to that church, and an industrious student of the writings of the theological fathers." The dogma that drove him into this church was the apostolic succession.

Cooke was not a pleasing speaker. According to the elder Yandell, he lacked dramatic talent and thought; always earnest, and enthusiastic at times, he had no turn for wit or ridicule. He was near-sighted, wore glasses, and delivered his lectures with a feeble voice, labored articulation, and awkward gestures. His doctrine though erroneous was easy to understand, sparing the student time, and the trouble of studying the many pathological and therapeutic features not involved in it. Moreover, it was promulgated with such logic, earnestness and sincerity that it was readily accepted, believed, and practiced by the majority of them. As a statement of his doctrine, and a sample of his diction, style, and logic I quote the following from his Essay No. 1 on Autumnal Epidemics. "We have abundant reason to believe that these wasting pestilences are the effects of a dense gas, the product of the decomposition of vegetable matter. The agent in question, commonly distinguished by the name of miasmata, causes the blood of those who are exposed to its influence to be of a darker colour than common. Goodwin's experiments on the connexion of life with respiration show, that when the blood is dark-coloured, it does not stimulate the heart to as vigorous action as when it is of the usual colour; and therefore that under the influence of this dark-coloured blood, the action of the heart is weakened. Weakened action of the heart is actually observed always to occur in the commencement of autumnal diseases. This state of the heart necessarily and inevitably produces accumulation of blood in the vena cava and its great branches. Internal congestion or accumulation is also observed actually to occur in these diseases. Accumula-

tion of blood in the vena cava cannot exist without extending into the large veins of the head, the liver, the stomach and bowels, and the kidneys; and consequently affecting all these parts. Universal experience shows that they are all affected in the diseases in question. From accumulation of blood in the interior and its consequent absence from the exterior, must also result paleness, shrinking and diminution of the temperature of the external surface; while the sudden presentation of an increased action, if it be capable of it at the time. These effects are also observed to occur in connection with the others, above stated, in the diseases produced by the agent in question. It appears therefore that this agent, miasmata, by rendering the blood dark-coloured, weakens the action of the heart; the consequence of which are weakness of the pulse, diminution of the bulk of the external parts of the body, shrinking of the features and of the skin, paleness and coldness of the surface; together with accumulation of blood in the vena cava and its branches whence arises pain in the head, comatose affections, convulsions, delirium, disordered secretion of the liver, nausea and vomiting, want of appetite, disordered bowels and kidneys, the convulsive agitation of ague, and increased action of the heart, which produces increased colour, temperature, and bulk of the external parts. These symptoms, with some others arising from the same cause, constitute the paroxysm, viz.: the cold and the hot stages of a fever: they are moreover the leading features, present in all autumnal diseases."

Such reasoning is strong, simple, and was convincing in his day, the only fault being that it was not true. It prevailed for nearly a half a century, but a reaction had long been brewing, and the opposition to his doctrine became formidable. In fact, his influence had so visibly declined from the day he entered Louisville, "that in 1843 he was, on petition of his students, retired on a three years pension of two thousand dollars per annum." During the ten years following his downfall he lived in seclusion upon a small farm east of Louisville, where, according to Dr. L. P. Yandell, Sr., he died a martyr to his own theory and practice. Says Dr. Yandell: "his practice on himself was of the same heroic character that he pursued with his patients. He bled himself at once copiously, and repeated the operation again and again as symptoms appeared to him to demand it, at the same time keeping up purgation with calomel. Exposed as he was on his farm, these attacks became frequent, and his constitution, naturally enfeebled by increasing years, at length gave way under them." Thus closed the career of a great, and influential physician, and a gentle, noble and sincere soul.

In these days full etiological light, scien-

tifically exact surgery, and medicine rapidly approaching that goal, the young physician is prone to undervalue, if he does not despise, the work of the ante-bacteriological masters in medicine. But it must not be forgotten that they blazed their way through a primeval forest, and out of dense darkness brought much truth to light. Exact science was not theirs, and their only line of procedure was through logic, philosophy and metaphysics. All honor to them, they did all that the knowledge of their time permitted them to do. They were students, scholars, thinkers, and logicians. Not a few of them were graceful, facile and polished writers, and it is to be deeply regretted that their talents were not devoted to living themes, instead of topics which made them the unintentional products of an obsolete literature, voluminous and vast.

PROFESSOR WILLIAM HALL RICHARDSON.

By ROBERT PETER, A. M., M. D., Lexington.

Taught in the Medical Department of Transylvania until the time of his death in 1844, and was highly respected by his pupils as a practical teacher in his especial chair, notwithstanding the fact that he had not had the advantage of a college education. He was a man of great energy and of many admirable traits of character. His pupil, the late Dr. Lewis Rogers, in his address as President of the Kentucky State Medical Society in 1873, thus spoke of his old preceptor and friend:

"Few men ever had nobler traits of character. He was warm-hearted, brave, and a sincere friend. I knew him from my earliest boyhood, and have passed away many happy and instructive hours at his magnificent home in Fayette County. His hospitality was profuse and elegant. I listened to his public teachings as a professor with interest and care, because I knew he taught the truth as far as he possessed it. He was not scholarly or graceful and fluent as a lecturer, but he was ardent and impressive, sufficiently learned in his special branch, and had at his command a large stock of ripe experience. I honor his memory beyond most men I have known."

In 1819, a new and brilliant era for the University, and for the Medical Department of Transylvania, was inaugurated by the appointment of Reverend Horace Holley, LL. D., to the Presidency of the University. Doctor Samuel Brown was recalled to the chair of the Theory and Practice of Medicine, which he retained until 1825. Doctor Charles Caldwell was induced to remove from Philadelphia, where he had an official connection with the University of Pennsylvania, and accept the chair of the Institutes of Medicine

and Materia Medica here, thus completing the organization with the existing professors, Benjamin W. Dudley, and William H. Richardson, and the election of Reverend James Blythe to the chair of Chemistry. The celebrated naturalist and author of the first "History of Kentucky," C. S. Rafinesque, was also selected to lecture on Botany and Natural History in this and the following year.

One of his greatest pleasures was in his extensive herbarium with the native plants of Kentucky collected by himself, as well as those from other regions obtained by the exchange of specimens with the various botanists of the world, with whom he corresponded individually and extensively. He, in conjunction with Professors H. H. Eaton, H. A. Griswold, and Robert Peter, contributed to the *Transylvania*



DOCTOR WILLIAM H. RICHARDSON

Died In 1844

DOCTOR CHARLES WILKINS SHORT.

By ROBERT PETER, A. M., M. D., Lexington.

Dr. Charles Wilkins Short was born at "Greenfields," Woodford County, Kentucky, October 6, 1794. He connected himself with the Medical Department of Transylvania University in 1825. He had been called by the Trustees in a previous year to the chair of Materia Medica and Medical Botany, but did not at once accept.

Dr. Short was a most upright, conscientious, modest, undemonstrative gentleman of great delicacy of feeling. He was a most zealous and industrious botanist, and was possessed of artistic tastes and ability.

Journal of Medicine several papers on the plants of Kentucky, and wrote for that periodical several papers on this subject and on medical topics, as well as numerous obituary notices of medical men. He was not the author of any large treatise.

In 1845, he wrote "Observations of the Botany of Illinois," published in the *Western Journal of Medicine and Surgery*.

In the early volumes of the *Transylvania Journal* also appeared his notices of two remarkable cases which occurred in Lexington. One, of supposed spontaneous combustion of the human body, and the other of paralysis of the kidneys.

At his death his vast collection of botanical

specimens, in the formation of which he took such delight, and to which he had devoted so great a portion of his life, was bequeathed to the Smithsonian Institute at Washington, but there was no appropriate place there in which to display so large a collection, and it is now in possession of the Academy of Natural Sciences at Philadelphia. During his life no less than five of the distinguished botanists of the age honored his name by attaching it to six new genera and species of plants.

His lectures to the medical students on Ma-

Doctor Short severed his connection with the Transylvania Medical School in 1838 to be allied with Doctors Caldwell, Cooke, and Yandell in the Medical Institute of Louisville, in which he remained until 1849, when his colleagues elected him Emeritus Professor of Materia Medica and Botany. He died at his beautiful country residence, "Hayfield," near Louisville, on March 7, 1863, aged sixty-nine years.

Doctor Short's father was Peyton Short, who came to Kentucky from Surry County,



DOCTOR CHARLES WILKINS SHORT

1794--1863

teria Medica and Medical Botany he always read from his manuscript, which detracted somewhat from his impressiveness. He was too modest to trust himself to oral discourses. Yet his pupils were always closely attentive and respectful, holding him and his teachings in high esteem.

He was Dean of the Medical Faculty of Transylvania for about ten years.

For some years he was co-editor of the *Transylvania Journal of Medicine* with Doctor Cooke. This quarterly they founded in Lexington in 1828.

Virginia, and whose mother was Elizabeth, daughter of Sir William Skipwith, Baronet. His mother was Mary, daughter of John Cleves Symmes, formerly of Long Island, who filled various offices of honor and trust in Cincinnati. His sister was the wife of Doctor Benjamin Winslow Dudley. His brother was the late Judge John Cleves Short, of North Bend, Ohio. He married Mary Henry Churchill. Of his six children, one son and five daughters, all were prosperous in life.

The early education of Doctor Short was in the school of the celebrated Joshua Fry, and,

in 1810, he graduated with honor in the Academical Department of Transylvania University, beginning soon afterward the study of medicine with his uncle, Professor Frederick Ridgely. He repaired to Philadelphia in 1813 and became a private pupil of Doctor Casper Wistar, Professor of Anatomy in the University of Pennsylvania, in which university Doctor Short received the degree of Doctor of Medicine in the spring of 1815, returning shortly after to Kentucky. Dr. Short was a consistent member of the Presbyterian church.

versity of Pennsylvania, from which he took the Doctorate degree in due time.

In 1793 yellow fever desolated the old town of Philadelphia, and decimated its inhabitants; but here the young physician, like Savanorola in plague stricken Florence, stood firm and faithful to duty, and to science, distinguishing himself alike as a practitioner and philanthropist. Not long after this he appears as a United States Surgeon, and gained fame by his treatment of the wounded in the "Whiskey Insurrection" of Western Pennsyl-



DOCTOR CHARLES CALDWELL

1772--1853

DOCTOR CHARLES CALDWELL.

By HENRY A. COTTELL, A.M., M.D., Louisville

Dr. Charles Caldwell, the son of an Irish officer, and emigrant to America, was born in Caswell County, North Carolina, May 14th, 1772. He died in Louisville, Ky., July 9th, 1853, at the age of 81. He must have been a precocious child, for at 14 he was a scholar in the classics. For the three years following he taught successively in two grammar schools. At the close of this work or soon after, he entered the Medical School of the Uni-

vania. His career as a surgeon must have been short, since his voluminous writings contain little or nothing relative to that great branch of the healing art.

His inclination certainly was toward the more scientific and theoretic features of his calling for in 1795 he translated from the Latin, Bluembach's Elements of Physiology. In 1814 he assumed the editorship of the *Port Folio* at Philadelphia, and at this time became Professor of Natural History in the University of Pennsylvania. While in this Chair he edited Cullen's Practice of Physic. He was a

pioneer in the teaching of Clinical Medicine in America and perhaps the Creator of that branch of pedagogy, for in the above named year we find him delivering a course of clinical lectures in the Philadelphia Alms House afterwards and now known as Blockley Hospital. This was doubtless the Alms House in which the yellow fever of 1793 made such fearful havoc, and which became historical in the classic lectures of Prof T. S. Bell.

In 1819 Dr. Caldwell proved himself a historian by writing the "Life and Campaigns of Gen. Green"; the most valuable of his works in biography. A man so learned, versatile, and brilliant, attracted the attention of educators the country over, and a call from the West brought him to Lexington, Kentucky, where he was given the Chair of Medicine and Clinical Practice in the famous old Transylvania Medical School. This was also in the year 1819. He made a tour of Europe in the interest of that School in 1820. His sojourn in Lexington was for 18 years, and there he became famous amongst other accomplishments, as an advocate, student, writer, and teacher of the long ago exploded fad of phrenology. Here he was the friend and physician of Henry Clay who, in his great speech in the United States Senate upon the Poindexter Resolution, thus humorously refers to his friend and physician. "A new philosophy has sprung up within a few years past, called phrenology. There is, I believe, something in it, but not quite as much as its ardent followers proclaim. According to its doctrines, the leading passions propensities and characteristics of every man are developed in his physical conformation, chiefly in the structure of his head. Gall and Spurzheim, its founders, or most eminent propagators, being dead, I regret that neither of them can examine the head of our illustrious Chief Magistrate (Andrew Jackson). But, if it could be surveyed by Dr. Caldwell, of Transylvania University, I am persuaded that he would find the organ of destructiveness prominently developed. Except an enormous fabric of executive power for himself, the President has built up nothing, constructed nothing, and will leave no enduring monument of his administration."

In 1837 Dr. Caldwell came to Louisville. This was because of a break in the medical faculty of Transylvania, Dr. Caldwell coming with Drs. Cooke and Yandell to take chairs in the Louisville Medical Institute. Out of this school grew the Medical Department of the University of Louisville, in the foundation of which Dr. Caldwell was the leading spirit. To him was allotted the same chair he had held in Transylvania, and he continued teaching Medicine and Clinical Practice there for a term of twelve years. Through a misunderstanding with the Trustees he was, in 1849,

deprived of his professorship; but made Louisville his home until his death, July 9th, 1853. These four years he spent in study and work with the pen, contributing profusely to medical journals and periodicals, and in writing his Autobiography. He was a deep student, an omnivorous reader, and untiring writer. His works are almost as voluminous as those of Daniel Drake, and number in the aggregate more than 10,000 pages. The reader will see in selections which I quote from Caldwell's Autobiography the lucidity of his diction, the felicity of his style, the depth of his thought, and the facility with which he drew upon his store of learning for strengthening and ornamenting his thought. Charles Dickens could not have excelled the first, nor Ralph Waldo Emerson the second. The first two paragraphs relate to two preachers. "The appearance of the speaker, unpromising as it was, and nature, in her most frolicsome mood, could hardly have rendered it more so, was exceeded, if possible, by the failure of his performance. His oratory, instead of being, as I had anticipated, the most highly finished and delightful I had ever listened to, was much nearer being the most defective and miserable. Not only was it tasteless and unattractive, it was a rare and high-finished specimen of unsophisticated unpalatableness. From the beginning to the end of his sermon, the gentleman so courtesied, bobbed, and tip-toed from side to side of the pulpit, and so finically gesticulated with his hands and arms, as actually to resemble a conceited dancing-master moving in a minuet. And his utterance was precisely the counter part of his action. Nor was the substance of his discourse much more commendable"

So much for preacher No. 1; now for No. 2. "No sooner had he formally assumed his attitude as an orator, thrown toward the several divisions of the house a corresponding number of devout and solemn casts of his eyes, and commenced his discourse, than I felt an impulse of disappointment, mingled with feelings dissatisfaction and disgust, that was actually painful to me. Could I have made my way to the door, without being noticed, I should have promptly left the house and returned to my lodgings. But that was impossible. I was therefore compelled to brace myself to the Herculean task of sitting a full hour under the influence of a discourse, marked in its delivery, by a degree of drawling sing-song, and snuffling nasal twang, that would have better suited the time of Oliver Cromwell, than to the close of the eighteenth century; and that would have fallen more aptly from the tongue of a "Praise God-Bare-Bones" of the former period, than from that of a much lauded orator of the latter."

The next two paragraphs discuss a theme of universal application. "What is called a

'universal genius,' is a creation as fabulous as the phoenix or the griffin. It exists only in fiction, not in reality. No man has ever yet possessed it, consisting, as the expression represents it to do, in a fitness for the pursuit and attainment of eminence in every sort of knowledge. Whoever has, therefore, expended his energy in an attempt to distinguish himself in a branch of science, for the study of which he was not well qualified, has, by the measure, detracted more or less from the distinction he might have acquired in some other branch to which his qualifications were better suited."

"To this rule the history of our race does not present us with a single exception. It is as true of the most highly as of the moderately and lowly gifted, of Socrates and Plato, Cicero and the admirable Crichton, as of any other individuals. Had the great Roman orator wasted less of his mental energy in paying court to the Muses, he would have bequeathed to us a reputation marked by one vanity, and one intellectual weakness, the fewer. The same may be said of Paracelsus, Vanhelmont, Cardan, and others; had they thought and written less about occult science, its source and influence; of Cuvier, had he consumed less of his time in the consideration and pursuit of affairs of state; and of Laplace, had he devoted himself more exclusively to mathematics and astronomy, and left to ecclesiastics and casuists the mysteries of theology. Each of those personages, by aiming at too many attainments and performances, expended a portion of his vital strength, as well of his time, in an unprofitable if not an injurious manner."

Of his personnel we have a glimpse. He is thus sketched and characterized by Dr. David W. Yandell in his Doctorate Address, on the occasion of the Semi-Centennial Anniversary of the Medical Department of the University of Louisville, 1887.

"The central figure of that group of noted teachers who founded the University was Charles Caldwell. He was a massive man in body and in mind. He was both tall and broad. His carriage was erect. His head was simply grand, his mouth was large, his eyes were bluish gray. He had studied elocution. His gestures and his speech were studied also. His manners, usually cold, were always stately. He spoke in long, well-rounded periods, and in a great sonorous voice. He was learned in the languages, fond of study, and of abstemious habits. Besides all this he was a man of affairs, and delighted in controversy. He taught the physiology of his day, which was then largely the physiology of the ancients, but he taught it in so impressive a manner that his classes received it as gospel and voted him its greatest expounder."

DOCTOR LUNSFORD P. YANDELL, Sr.

By ROBERT PETER, A. M., M. D., Lexington.

Dr. Yandell was called to the chair of Chemistry and Pharmacy in the Medical Department of Transylvania University, March 16, 1831. He had attended the course of Lectures in that school in 1822-23, having previously acquired a good general and classical education in the Bradley Academy, Murfreesboro, Tennessee, and having studied medicine some time with his father, Dr. Wilson Yandell, a physician of high standing.

While attending the lectures in the Transylvania Medical School he became favorably known as a young man of industry, good attainments and ability, and of popular manners. Especially was he a favorite pupil of Professor Charles Caldwell, who became his ardent friend, and through whose active influence, mainly, he was called in 1831, after he had received the degree of M. D. from the University of Maryland, to occupy the chair of Chemistry in the Transylvania School.

Although he had been an apt scholar in his preliminary education, he had never devoted especial attention to chemistry, which at that time, notwithstanding the neglect or opposition of the older medical teachers, notably the ridicule of Professor Caldwell and others, was beginning to be recognized as an essential element of a good medical education.

This want of special training and experience in this branch of science on his part naturally caused opposition to his appointment to this chair, which was allayed by making the late Hezekiah Hulbert Eaton, A. M., an adjunct to the Chemical chair, and giving him one-third of the tuition fees.

Professor Eaton was a young man of fine attainments and thorough practical training in chemistry and natural science generally; a graduate of Rensselaer Institute of Troy, New York, under the administration of his father, the celebrated Amos Eaton.

Professor Eaton died of consumption at the age of twenty-three, before the end of the first year; but during the short term of his service he had, by his industry and practical knowledge, greatly improved the means of instruction in the Chemical Department by a complete reorganization of the laboratory and the procurement of much new apparatus.

After the death of Professor Eaton, August 16, 1832, the present writer, then residing in Pittsburg, Pennsylvania, who had also been a student in the Rensselaer Institute and consequently known to Professor Eaton, was persuaded by the late Reverend Benjamin Orr Peers to visit Lexington, Kentucky, to deliver a course of chemical lectures in the Eclectic Institute, of which Mr. Peers was principal, and of which young Professor Eaton had been a professor. During this course, in 1832, the

writer was induced by Professor Yandell, by private arrangement, to assist him in his next course of lectures to the regular students of Transylvania and to commence the regular study of medicine with a view to graduation.

Under this arrangement, which continued until the disruption of the Medical Faculty in 1837, Doctor Yandell, in his usual able and brilliant manner, delivered the chemical lectures to the students, while to the writer was committed the preparation and performance of the demonstrative experimental parts.

On the removal to Louisville in 1837, to join in the establishment of the rival school, the Louisville Medical Institute, Doctor Yandell

Trustees of the school, having come to the conclusion that Professor Caldwell had become superannuated, placed Doctor Yandell in the chair of Physiology, for which subject he had a decided taste. This change procured him the animosity of his whilom friend, Doctor Caldwell, who, in his rather unfortunate Autobiography, written in his last declining years, indulged in much bitter denunciation of his late colleague. It is much to the credit of Doctor Yandell that, although when this angry publication was fresh from the press he retaliated by showing in ample quotations from the autobiography some of the weak points in Doctor Caldwell's character, he was



DOCTOR LUNSFORD P. YANDELL, Sr.

1805--1878

taught in the combined chairs of Chemistry and Materia Medica, never failing ably and impressively to perform his arduous duties. Not having any particular taste for so severe a study as practical chemistry, although no one was more impressed with the philosophical beauty and wide practical value of the science, he naturally sought a transfer to a chair more congenial with his tastes and the character of his mind than that of chemistry. This, circumstances prevented until, in 1849, the

disposed in following years, as the writer knows, to extend over these weaknesses the mantle of kindness.

Doctor Yandell occupied this chair of Physiology with great credit until he resigned, in 1859, to accept a chair in the Medical School of Memphis, Tennessee. During the Civil War he devoted himself to hospital service. In 1862, he was licensed to preach by the Presbytery of Memphis, and in 1864 was ordained pastor of the Dancyville Presbyteri-

an church. He resigned his pastorate in 1867, and returned to Louisville to resume the practice of medicine, which he had never entirely abandoned during the whole of his life.

While resident in Lexington he was for some years sole editor of the *Transylvania Journal of Medicine*, to which he contributed several able papers. In Louisville he was editor for some time of the *Western Journal of Medicine and Surgery*, in both cases filling the editorial chair with characteristic activity and ability. He was always a contributor

Louisville, and at the time of his death he was President of the State Medical Society of Kentucky. His decease occurred February 4 1878, in the seventy-third year of his age.

DOCTOR JAMES MILLS BUSH.

By ROBERT PETER, A. M., M. D., Lexington.

A native of Kentucky, born in Frankfort, May, 1808, graduated as A. B. in Centre College, Danville, Kentucky, and began the study of medicine and surgery in the office of the



DOCTOR JAMES M. BUSH

1808--1875

to the medical literature of his day in numerous papers, especially in biographical sketches and obituary memoirs of medical men of Kentucky and Tennessee, a more complete collection of which he was said to be preparing at the time of his last illness. He held a facile pen; few writers of our times have produced more classical and graceful essays. As a public speaker and lecturer he was ever impressive, graceful, and chaste. His social qualities made him always welcome and prominent in all public assemblies of his medical brethren. In 1872, he was elected President of the College of Physicians and Surgeons of

celebrated Alban Goldsmith, Louisville, Kentucky. He removed to Lexington in 1830, to attend medical lectures in Transylvania University, and to become a private pupil of its renowned surgeon, Professor Benjamin W. Dudley. To Doctor Dudley he became personally attached by sentiments of affection and esteem, which were warmly returned by his eminent preceptor; so that, when young Bush received the honor of the degree of Doctor of Medicine in 1833, Doctor Dudley immediately appointed him his demonstrator and prosecutor in anatomy and surgery, to

which branches of medical science and art Doctor Bush was ardently devoted.

This responsible office he filled with eminent ability and success until 1837, when he was officially made Adjunct Professor of Anatomy and Surgery to his distinguished colleague and friend, Doctor Dudley. He occupied this honorable position to the great satisfaction of all concerned until the year 1844, when he became the Professor of Anatomy, Doctor Dudley retaining the chair of Surgery. In the chair of Anatomy he continued until the dissolution of the Transylvania Medical School in 1857.

In the meanwhile this school, in 1850, had been changed from a winter to a summer school; Doctor Bush, with some of his col-

Lewis Rogers, in 1873: "When Doctor Dudley retired from teaching, Doctor Bush was appointed to the vacant chair. When Doctor Dudley retired from the field of his brilliant achievements as a surgeon Doctor Bush had the rare courage to take possession of it. No higher tribute can be paid to him than to say that he has since held possession without a successful rival."

Most ably and successfully did he thus maintain himself as one fit to follow in the footsteps of our great surgeon. His sterling qualities as a man, his most kind and endearing manners as a physician, his great skill and experience in anatomy and surgery, which had been as well the pleasure as the devoted labor of his life; his remarkable accuracy of



THE HOME OF DOCTOR BUSH, IN LEXINGTON.

Built on the site of the Transylvania University Medical Hall.

leagues and some physicians of Louisville, having thought proper to establish the Kentucky School of Medicine in Louisville as a winter school. In this latter college Doctor Bush remained for three sessions, giving thus two full courses of lectures per annum, when he and his Lexington colleagues, resigning from the Louisville school, returned to that of Lexington, re-establishing a winter session.

Doctor Bush was ever a most conscientious and ardent laborer in his profession, and, during the lifetime of his preceptor, Doctor Dudley, was his constant associate and assistant as well in the medical school as in his medical and surgical practice. On the retirement of that distinguished surgeon and professor, his mantle fell upon Doctor Bush. In the language of his friend, the late Doctor

eye, the more acute because of congenital myopia, his delicacy of hand and unswerving nerve in the use of instruments in the most difficult operations, endeared him to his patients and won the respect and admiration of his medical brethren.

Doctor Bush was a lucid and impressive teacher of his peculiar branch of medical art and science, and always attached his pupils strongly to him as an honored preceptor and friend.

During his active lifetime, spent chiefly in acquiring and putting in practice the rare professional skill which distinguished him, he gave but little time to the use of his pen. Hence he left no large book as the record of his experience. His principal writings were published, in 1837, in the tenth volume of the

Transylvania Journal of Medicine, and these were written for that journal on the solicitation of the present writer, who edited that volume. They consist of:

1. A short report of a case of epilepsy, produced in a negro girl by blows of the windlass of a well on the parietal bone, which was entirely and speedily cured, after the preliminary treatment of mercurial purgatives and low diet, by the use of the trephine, which, as is well known, had been used with great success by Doctor Dudley in such cases.

2. Report of a case of insidious inflammation of the pia mater, complicated with pleuritis, with the autopsy.

3. A more extended paper, entitled "Remarks on Mechanical Pressure Applied by Means of the Bandage; Illustrated by a Variety of Cases." In which the mode of application and *modus operandi* are most clearly given, and illustrated by many interesting cases, mostly from the surgical practice of Doctor Dudley.

4. "Dissection of an Idiot's Brain." The subject, a female twenty-five years of age, had been born idiotic, deaf, and dumb; the head was very small, and the brain on dissection was found to weigh only twenty ounces, and to have large serous cavities in the conical portions of the cerebral hemispheres. The anatomy of the eyes was perfect, but there was no nervous connection between the optic nerve and the *thalami nervorum opticorum*.

5. A short notice of three operations of lithotomy, performed on May 31, 1837, by Doctor Dudley, with his assistance.

6. "Interesting Autopsy." On the body of a negro man who had been the subject of sudden falling fits, and was under treatment for diseases of the chest. The autopsy disclosed hypertrophy of the right side of the heart, and a most remarkable lengthening of the colon.

7. "Observations on the Operation of Lithotomy, Illustrated by Cases from the Practice of Professor B. W. Dudley." An extensive and lucid description of the method of operation and the remarkably successful experience of Doctor Dudley in this part of his practice, giving report of one hundred and fifty-two successful cases up to that time.

In addition, the Doctor contributed an occasional bibliographical review or notice. And these seem to be the whole of his published professional writings.

Dr. Bush was married, in 1835, to Miss Charlotte James, of Chillicothe, Ohio. Of their three children the eldest, Benjamin Dudley, was a young man of remarkable promise as a surgeon and physician when he was cut off by death, an event which cast a gloom over the remaining days of the life of his father. Few young men of his age had

ever attained such proficiency or developed such sterling qualities.

The death of Doctor Bush, which took place on February 14, 1875, was followed by general and unusual manifestations of respect and regret not only on the part of the members of the profession, but by the people of the city at large. Few citizens were more extensively known, loved, and honored in life, or followed to the grave by a greater concourse of mourning friends.

DOCTOR ROBERT PETER.

By REUBEN T. DURRETT, ESQUIRE Louisville.

(Late President of the Filson Club.)

The late Doctor Robert Peter, one of the most distinguished analytical chemists of his time, was a member of the Medical Faculty of Transylvania University from 1833 to the time of the dissolution of that institution, and afterward occupied chairs in the different colleges with which Transylvania was merged. He was one of the most active of the professors and did as much as any one else to raise the University to the lofty heights it attained as a school of literature, law, and medicine. It occurred to him after the merger of the Transylvania into the Kentucky University that an institution which had led the way and done so much for literature, law, and medicine should not be permitted to vanish and leave nothing but a name and memory behind. He, therefore, went to work, after the weight of years was gathering fast upon him, to write the history of Transylvania University, and had his work almost finished in 1894, when death, which alone could have arrested him in his undertaking, relieved him of the task at the age of eighty-nine. His daughter, Miss Johanna Peter, with filial affection worthy of so excellent a father, and public spirit equal to the occasion, rightly estimated the value of such a work, if it should be published and put into the hands of the public, undertook to prepare his manuscripts for publication. One of these manuscripts prepared by her embraced the Literary Department of Transylvania, and was published by The Filson Club in 1896, as its eleventh volume. When this publication was made, it was intimated, if not promised, that it would be followed in the near future by one of the medical department. Miss Peter, therefore, prepared this second manuscript of her father for publication, and The Filson Club now presents it in the pages which follows, as the twentieth number of its regular annual series.

The Medical Department of the Transylvania University no longer exists. Indeed, nothing of the Transylvania University exists except its name. Its learned professors have gone the way of all flesh. The last one of

them recently went down to his grave. Its buildings have recently been swept away by fire, or have passed to other institutions with its library and apparatus. Yet all of this renowned University has not passed away. Its fame yet lives, and will not perish while the memory of the living holds sacred the good deeds of predecessors. Its distinguished professors made Transylvania University fam-

twentieth publication of The Filson Club, the manuscript will make its way to many and present them with pen and portrait likenesses of those who devoted their lives to instructing the young of our land in the art of administering to the sick and afflicted. The author knew all of his contemporary professors, and the likeness which he has given of some of them will be the ones by which they will be



DOCTOR ROBERT PETERS

1805--1894

ous, and made history at the same time, and they themselves are now entitled to a place in history. It is the purpose of The Filson Club, by this publication, to assist in securing for them the place they deserve in the memory of mankind. Doctor Peter, the author was the fittest of men to sketch these professors and to present life pictures of them. His work, however, if it had remained in manuscript, as he left it, would have been seen but by few, and could have done but little good. In this

known in after years. Pen pictures are sometimes as efficient as likenesses in oil, and the characteristic of Doctor Peter's pictures is fidelity so executed that they seem to be the originals standing in life before us. In a work like this the essence of its history is biographic and Doctor Peter has made his work to consist chiefly of biographical sketches of those who made Transylvania University what it was. He gives the leading facts in the life of each of the professors he sketches, and enum-

erates the other colleges in which they occupied chairs, and gives the titles of the works they published either in book form or magazine articles. He omits nothing in the sketch that is necessary in forming a just idea of the character portrayed.

In the long career of Transylvania University she did not fail to make enemies, but she made more friends than enemies to remember her. A few of the living students and the many descendants of the deceased professors and graduates now scattered broadcast over the land will be glad to read what is here said of old Transylvania, and the work will thus be widely known and read. All who see it will be thankful to Doctor Peter for preparing it for the press, and to The Filson Club for publishing it.

There is in our nature something like the love of the relic which makes us revere the memory of Transylvania University. Early in the year 1799 a medical department was attached to this University, which was the first medical college in the great Mississippi Valley and the second in the whole United States. The medical department of the University of Pennsylvania antedated it, as it antedated all others afterward established in any part of our vast domain. We can not, like our English cousins, go back along the pathway of centuries to the colleges of Oxford and Cambridge and revere them for their age; we have nothing in our new country that partakes of such age. We are a young people in a young country, and our Transylvania Medical College was old enough from our standpoint to be crowned with hoary years. We revere it as the first medical college on this side of the Alleghanies. We revere it for the efforts it made to prepare our young physicians to cope with the diseases that afflicted our people. We revere it for the fame it acquired and for the good name it gave our State. We revere it for the success of Professor Brown in introducing vaccination in advance of its discoverer, for the brilliant and numerous operations in lithotomy by Professor Dudley, and for the noble efforts of others of its professors in prolonging human life and mitigating its pains. What it did in the day of its glory is set forth in the pages which follow, and he who reads them will hardly doubt that the medical department of Transylvania University is worthy of the record here made for it.

DOCTOR HENRY MARTYN SKILLMAN.

By JOHN W. SCOTT, M. D., Lexington.

Doctor Skillman was the youngest child of Thomas T. and Elizabeth Farra Skillman: he was born September 4, 1824 at Lexington, Kentucky. His father came to Lexington from New Jersey in 1809 and founded the largest publishing house in the Mississippi Valley; publishing in 1823 an edition of several thousand copies of the entire bible.

He received his academic education at Transylvania University and after two or three years in the drug business re-entered Transylvania as a student of Medicine and received from it the degree of Doctor of Medicine in 1847. The following year he was made Demonstrator of Anatomy in the College and, in 1851 was appointed Professor of General and Pathological Anatomy and Physiology. Such a chair in a modern school would require the activities of some half dozen full professorships, to say nothing of scores of assistants and laboratory workers. Yet the subject of this sketch is said to have "occupied this position with skill and success until the close of the Medical College in 1857." This is an illuminating commentary upon the progress of Medicine in the last half century.

In 1851 he married Margaret Scott the daughter of Matthew T. Scott, President of the Northern Bank of Kentucky; one child, Henry M. Skillman, survives him. For the succeeding twenty-five years he devoted himself to the practice of both medicine and surgery; in 1877 his nephew, Doctor Matthew T. Scott, entered into practice with him and all of Doctor Skillman's surgical work was transferred to him; from that time until his death on March 21, 1902 he continued the active practice of his profession, having done a day's work on the day upon which he died. In addition to his large practice he found time for outside affairs: he was an active member of the Second Presbyterian Church, a director of the Security Trust Company and occupied other similar positions.

There was a benediction about his face, a power of peace and love in his smile, a charm in his entire personality which defies description; with a great sympathetic heart he combined the most knightly courtesy; this gave him a bearing at the bedside which none who witnessed it can ever forget; there was solicitude without anxiety, cheer without gaiety, dignity without coldness and, withal, a poise which inspired confidence in not only the will but the ability to help. The same character was shown in his relation to other members of the profession. In addition to the most scrupulous observance of its ethics, there was an unfailing kindness and generosity which was shown toward the humblest

of his colleagues in the same measure as to the most distinguished.

To the profession his career was particularly notable in three particulars; first, in that it was given to him, as it has been to few men, to occupy a position of eminence in the practice

thousand to a city of more than thirty thousand; he was the relentless enemy of discord and evil speaking among doctors, and an irresistible peace maker in the profession for over half a century.

To those who revere the memory of the old



DOCTOR HENRY M. SKILLMAN

1824--1902

of medicine for more than half a century, having been made a member of the faculty of the Medical Department of Transylvania in 1851; and at the time of his death, fifty-one years later, still probably the most sought for consultant in Lexington, which during that time he had seen grow from a town of eight

Transylvania and its Medical Department, Doctor Skillman was notable as the last survivor of its medical faculty and, with Doctor John W. Whitney, his intimate friend, the connecting link for many of us to that heroic age, that Twilight of the Gods, the Transylvania Medical Faculty.



OLD MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISVILLE

Erected In 1838

Now occupied by the City Public School Department, the Medical School being conducted
in the commodious new building at Chestnut and First Streets.

III. LOUISVILLE MEDICAL SCHOOLS' GROUP

FOREWORD

I. THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISVILLE.

The reader will find a concise account of the movement which transferred the famous medical school of Transylvania University from Lexington to Louisville in Professor I.

ed actively in the changing events of that period. The professors who resigned from Transylvania and accepted chairs in the Louisville Medical Institute soon found themselves surrounded with large classes of young men from all sections of the great and growing south-west. After a few years (1845) the Medical Institute was constituted the Medical Department of the newly chartered University of Louisville. With the prestige of the



DOCTOR JAMES M. BODINE

1831--1915

For more than forty years Dean of the Medical Department of the University of Louisville, and a great teacher of anatomy.

P. Yandell's address which is in great part reproduced herewith. This address, introductory to the course of instruction of 1852-1853, was delivered at a time when all the facts were known and by one who participat-

great men composing the faculty, the school continued upon a career of great prosperity and usefulness. Large classes filled its lecture-rooms, the professors wrote some of the most authoritative and erudite text-books of

that day, and by both the spoken and written word moulded medical thought and practice throughout a great and prosperous section of the country. In 1849 the Faculty was constituted as follows:

Samuel D. Gross, Professor of Surgery;

Rogers, Professor of Materia Medica; Daniel Drake, Professor of Theory and Practice of Medicine; Tobias G. Richardson, Demonstrator of Anatomy. Professor Cobb was Dean of the Faculty.

In 1852 Dr. Daniel Drake and Dr. Jebe-



DOCTOR WILLIAM BAILEY, A. M.

1833-1911

A teacher in the Medical Schools of Louisville from the days of the Civil War until his death; a medical veteran of the war; a member of the State Board of Health for a quarter of a century, and President at the time of his death; President of the State Society and of the American Public Health Association, and one of the most beloved physicians and consultants Louisville ever had.

Henry Miller, Professor of Obstetrics; Jebediah Cobb, Professor of Anatomy; Lunsford P. Yandell, Professor of Physiology; Benjamin Silliman, Professor of Chemistry; Lewis

diah Cobb resigned their chairs and were succeeded by Dr. Austin Flint and Dr. Benjamin R. Palmer. Dr. Austin Flint, a native of Massachusetts, had taught in Buffalo, New

York, and in New Orleans, before coming to Louisville. Later he aided in founding the Bellevue Hospital Medical College, in New York, where for many years he taught and practiced with eminent renown. Dr. Benjamin R. Palmer was a native of Vermont, and won distinction as a teacher of Anatomy.

Great names are these. They were borne by men of profound thought, intense energy and impressive personality. They moulded medical science as taught in America, and educated a generation of practitioners of medicine. While in Louisville Professor Gross wrote his famous treatise on Pathological Anatomy, and the first edition of his monumental work entitled a System of Surgery. While teaching in the University of Louisville, Professor Flint laid the foundation for his great text-book on the Science and Practice of Medicine. Professor Miller wrote his well-known treatise on Obstetrics published in 1849, which became a standard text-book. No two books in the history of American medicine have been so universally accepted by the profession as authoritative as were the works of Gross and Flint. Bound in strong sheep-skin they were to be found in the office of every American physician, in the city, hamlet and country, and were for many years the trusted guides in diagnosis, pathology and treatment.

As time advanced, with increasing population and improved facilities of travel, many changes have taken place, but throughout and until the present day, the University and its many graduates in all parts of the country have maintained its traditions. The history of this school is one of the most brilliant chapters in the medical annals of Kentucky. After more than a half century of prosperous achievement, the University was selected by unanimous vote as the parent school in merging the medical schools of Louisville. In 1907 the Medical Department of Kentucky University, Louisville's youngest medical school, was merged with the University of Louisville. The following year the Kentucky School of Medicine, the Louisville Medical College and the Hospital College of Medicine joined in the merger, and thereby united into one school under the title and charter of the Medical Department of the University of Louisville. It is gratifying to record that in this present time this famous old school, the only medical school in the Commonwealth, maintains a worthy position in the highest grade of American medical colleges.

II. THE KENTUCKY SCHOOL OF MEDICINE.

From time immemorial medical schools have been centres of professional jealousy, intrigue and antagonism. That this should be seems somewhat illogical when we realize that the faculties of the colleges were composed of men selected by reason of their ability, learning and distinguished position. Nevertheless, the lust of power and preeminence, the jealousies born of rivalry at close range, produce their logical results here as elsewhere in the field of human endeavor.

At the period of which we write, the medical schools offered the only direct avenue to prominence and leadership in the profession. Hospitals were few and primitive, medical literature was scant, and medical societies did not offer the opportunities of the present time. The professors in the medical colleges were accepted leaders and authorities of the time, and the colleges offered a sure road to distinction. Hence there were many aspirants for places in the faculties of the schools. Young men of high purpose and lofty ambition sought the subordinate positions in the colleges as a proper and legitimate method of improving their knowledge and advancing to prominence. In this way very naturally there soon became numerous applicants for each probable vacancy, and the most reasonable outlet for the congestion was the establishment of a new medical school.

The origin of such schools will almost invariably be found in factional strife within the faculties of established schools, facilitated by the numerous aspirants for professional positions outside the schools. In the early days such increase in the number of colleges was not without good results both for the colleges themselves and for the advancement of the profession. The competition which necessarily obtained, stimulated the teachers to better work and fostered a spirit of rivalry which was helpful to both teacher and pupil. It was only in later times, when schools were established for which there was really no good reason for their existence, that the multiplication of medical schools became *destructive* instead of *constructive* agencies of professional progress.

These observations are suggested by the fact that in 1850, when the Medical Department of the University of Louisville was firmly established in professional favor, occupying a new and commodious building, with large classes and a renowned faculty, application was made to the Legislature of Kentucky for charter of a new medical college to be known as the Kentucky School of Medicine, and to be located in the city of Louisville. The charter was granted, and at the head of its first faculty appears the name of Benjamin W. Dud-

ley, one of the most brilliant teachers in Transylvania University at Lexington, who had strenuously opposed his colleagues in the removal of that school to Louisville. Indeed Dudley had reorganized the faculty after most of his colleagues had removed to Louisville, and made a futile effort to maintain the old school at Lexington. The establishment of a rival school in Louisville was a continuation doubtless of Dudley's antagonism, aided by the natural desire of his associates in the new school for professional distinction.

will be found many names familiar in Kentucky medicine:

B. W. Dudley, Emeritus Professor of Anatomy and Surgery; John Hardin, Professor of Obstetrics and Diseases of Women and Children; Charles W. Wright, Professor of Chemistry and Toxicology; Henry W. Bullitt, Professor of Physiology and Pathology; Theodore S. Bell, Professor of Theory and Practice of Medicine; T. G. Richardson, Professor of Principles and Practice of Surgery; N. B. Marshall, Professor of Materia Medica and



DOCTOR WILLIAM H. WATHEN

1846--1913

Dean of the Kentucky School of Medicine for thirty years, a leading surgeon and gynecologist, president and active worker in the State Medical Society, and, as Medical Referee in Louisville, an important factor in the suppression of quackery in Kentucky.

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While Dudley did not remove his residence to Louisville, he headed the faculty for several years as Emeritus Professor of Surgery, and gave to the new school the valuable aid of his great reputation and influence.

The new school brought together an able faculty of young and enthusiastic men, and attracted excellent classes. The following list of the faculty is copied from the annual announcement of the session of 1856, in which

Therapeutics; John S. Seaton, Professor of Anatomy; James M. Bodine, Demonstrator of Anatomy.

Among others will be observed Theodore S. Bell, afterward a learned Professor in the University; and Dr. James M. Bodine, for forty years the popular Dean and Professor of Anatomy in the University. Dr. T. G. Richardson, the Professor of Surgery, was a pupil of Professor Gross, of the University

faculty, and for several years a teacher of Anatomy at the University. He was the author of a text-book of Anatomy, and later a distinguished teacher of Surgery in New Orleans. He won a national reputation and was elected President of the American Medical Association.

During the great civil war this school was closed, but after the restoration of peace it reopened with a new and reorganized faculty. A few years later the faculty and trustees changed the time of holding the annual sessions from the fall and winter months to the spring and summer months, a change which subserved the convenience of many students of medicine. The school maintained its success and with an able faculty and large classes continued until merged with the other schools in the University of Louisville. At the time of the merger the school occupied a commodious college building of its own, and adjacent thereto a modern well-equipped hospital, also the property of the school.

III. THE LOUISVILLE MEDICAL COLLEGE.

On July 25, 1868 the surviving trustees of the Clay School of Medicine* met at the office of Dr. David Cummings in Louisville. The Board of Trustees was completed by the election of seven new trustees, and Hon. Littleton Cooke was elected President and Dr. B. M. Wible, Secretary. At the session of the Legislature of Kentucky in the winter of 1868-69 the charter was amended so as to change the name of the school to "The Louisville Medical College."

On January 29, 1869 the Board of Trustees elected the following professors: J. D. Burch and R. F. Logan, Anatomy; John Goodman, Obstetrics; Donald Maclean, Surgery; S. P. Breckenridge, Materia Medica; H. M. Bullitt, Physiology and Pathology; J. A. Ouchterlony, Theory and Practice of Medicine. The first session of the College was held in 1869-70.

During the following year, several important changes were made in the faculty, Drs. Burch, Logan, Maclean and Breckenridge retired, and Drs. E. S. Gaillard, J. A. Ireland, J. M. Keller, C. W. Kelley and J. W. Maxwell were elected professors. Later Dr. J. M. Holloway was received into the faculty.

The college at once met with favorable recognition from the profession, and the classes increased in number until the attendance quite equaled that of the University. It will

be observed that this college was founded soon after the close of the great Civil War, during that period of rehabilitation in the southern states known as reconstruction. Many young men who had been in the army sought professional careers. The professors in the Louisville Medical College, with few exceptions, had served in the Medical Corps of the Armies, and their names were familiar to southern soldiers. The Dean, Dr. E. S. Gaillard, a native of South Carolina, owned and edited the *Richmond and Louisville Medical Journal*, a monthly medical magazine with wide circulation throughout the South. He was a cultured physician, an impressive teacher, and wielded a facile and trenchant pen.

Professor Henry Miller, long a prominent member of the Faculty of the University, accepted a professorship in the Louisville Medical College and was actively identified with the new school for a number of years.

This College maintained its prosperity with an able faculty and large classes until merged with the other schools into the University. The magnificent granite building now occupied by the Medical Department of the University was built by the Faculty of the Louisville Medical College.

IV. THE HOSPITAL COLLEGE OF MEDICINE.

In 1873, an additional Medical School was founded in Louisville, under the charter, and by authority of the Board of Curators of the Central University of Kentucky. This University was located at Richmond, and was organized by the Presbyterian Church in Kentucky. The Medical School was established in a building immediately opposite the City Hospital on Chestnut Street, and in its first announcement gave prominence to clinical teaching as its most distinctive feature. The Faculty was organized as follows:

Dr. E. D. Force, Emeritus Professor of, and Lecturer on Diseases of Women; Dr. John J. Speed, Professor of the Institute of Medicine and Public Hygiene; Dr. James M. Holloway, Professor of General and Clinical Surgery; Dr. William Bailey, M. A., Professor of the Principles and Practice of Medicine and Clinical Medicine; Dr. John T. Williams, Professor of Descriptive and Surgical Anatomy; Dr. Wm. H. Bolling, Professor of Obstetrics and Diseases of Women, and Dean of the Faculty; Dr. John A. Larabee, Professor of Materia Medica and Therapeutics and Clinical Lecturer on Diseases of Children; Dr. Frank C. Wilson, Professor of Physiology and Clinical Medicine; Dr. Dudley S. Reynolds, Professor of Ophthalmology and Otology; Dr. J. B. Marvin, B. S., Professor of Medical Chemistry and Toxicology;

*The writer has not been able to find any record of the Clay School of Medicine beyond the mere mention contained in the minutes of the Board of Trustees of the Louisville Medical College. It is probable that a charter was obtained for such an institution, but no organization was perfected previous to this date.

Dr. Martin F. Coomes, Demonstrator of Anatomy and Lecturer on Diseases of the Ear, Throat and Nose.

The first session was opened with a small class, but within a few years the Faculty was rewarded by increased patronage and favorable recognition. After a few years the school became well established, and graduated many physicians who attained distinguished positions in the profession. Later the time of holding the annual sessions was changed to the spring and summer months, and this greatly increased the attendance. The school was the first of the Louisville schools to adopt the three years graded course, and by doing so won the commendation of the profession. In later years important additions were made to the Faculty, a new college building was erected and also a commodious modern hospital was built adjacent to the college, thereby providing excellent clinical facilities. At the time of the merger (1908), the college had large classes and a strong faculty.

V. MEDICAL DEPARTMENT OF KENTUCKY UNIVERSITY.

In 1898 differences arose in the Kentucky School of Medicine which proved irreconcilable and terminated in complete disruption of the faculty of that institution. As a result a new school was established, all the professors, with one or two exceptions, having been teachers in the Kentucky School of Medicine. The new school received the approval of the Trustees of the Kentucky University located at Lexington, and the Faculty was empowered to use the title of that University. The Faculty was announced as follows:

Dr. Joseph B. Marvin, President; Dr. Thomas C. Evans, Dean; Dr. James M. Holloway; Dr. C. W. Kelley; Dr. Sam E. Woody; Dr. J. Garland Sherrill; Dr. Louis Frank; Dr. Leon L. Solomon; Dr. Henry Enos Tuley; Dr. Carl Weidner; Dr. W. Ed. Grant.

The first session was held in 1899, beginning in January and terminating in June. The members of this Faculty were experienced and successful teachers, widely known to the profession, and attracted from the beginning excellent classes. They devoted themselves to the work with great enthusiasm, and inspired their students with keen interest in the school. At the opening of the second session a building which had been purchased by the Faculty and remodeled to suit the requirements of medical teaching, was occupied and added materially to the facilities of the institution.

The school maintained a successful career, with growing classes, until 1907, when it was merged into the Medical Department of the University of Louisville.

VI. SUMMARY.

When in 1908 the medical schools were merged into one, transferring their properties and prestige, and joining their alumni into one body, under the title of the Medical Department of the University of Louisville, a new era was born in the history of medical education in Kentucky. The transition from the old order to the new regime was the result of the irresistible forces of evolution, whereby medicine became intimately connected with biological and other allied sciences. Medicine became a science and ceased to be empirical, and medical education conformed to the inevitable change.

The old system was the outgrowth of the apprenticeship which in early days was the established form of medical pupilage. A prospective physician or surgeon became the apprentice of an established physician, usually one connected with an hospital, and often lived in the master's home. He paid a certain sum for board and tuition. Later this relation was known as preceptor and office pupil, which continued until very recent times. Then several physicians and surgeons, usually connected with the same hospital, banded themselves together, teaching different branches, and took pupils in common, the student paying each teacher by taking his ticket for admission to his lectures. Thus was established the so-called proprietary medical schools, which were enlarged from time to time to meet the advancing requirements of the medical curriculum.

Much adverse criticism has been visited upon the medical schools which were the outgrowth of this system of teaching. While many evils undoubtedly existed, and the commercial spirit became dominant in some places, to the shame of the profession, these were more the exception than the rule. Strictly speaking, all the medical schools in America would have to come under the head of proprietary schools in the times of which we are writing. While in many instances the college property was owned by a University or Board of Trustees, the Faculty conducted the business of the college, paid the expenses and divided the students' fees among the professors. This was true of the famous schools in Philadelphia, New York and Boston as well as in other parts of the country. This system of education was the outgrowth of conditions then existing in the United States. The population was scattered over a wide territory, and more doctors were required to serve the people than would obtain in a smaller area with dense population. In the greater part of the country educational facilities were inadequate to justify a high preliminary requirement of the medical student.

In Louisville, while the University of Louisville owned the building, and Central University of Kentucky owned the building of the Hospital College of Medicine, the connection between these Universities and the medical schools was merely nominal and the schools were conducted entirely independent of the university authorities.

In the independent medical colleges, the Boards of Trustees exerted practically no control over the standards and management of the colleges, the faculties being in unrestricted authority. Indeed, as a rule, the members of the Board of Trustees took only a nominal interest in the colleges. Under this system with all its abuse of privilege, hundreds of competent and skilled physicians were educated and the *esprit de corps* of the profession was maintained throughout. The leading medical schools voluntarily, and often at personal pecuniary sacrifice, made extensive and costly improvements in their facilities for teaching. Under the new regime the laboratory and the hospital ward have replaced the amphitheatre and crowded lecture room. Demonstrative teaching and clinical training by professional teachers have taken the place of the teachers who were both teachers and practitioners. The prolonged course of pupilage and the preliminary education necessary for scientific study are making a new generation of doctors, wherein scholarship and scientific attainments are the rule instead of the exception.

The medical schools are now integral parts of universities, and conform to the university system of teaching. Laboratories and hospitals afford the student unlimited facilities for study and training. A college education with special instruction in biology, chemistry and the Latin language are requisite conditions for admission to the study of medicine, and the college diploma is no longer a license for practice.

The old system had its day, and the man who instructed with lecture and quiz prepared the way for the greater achievements of the present age. The science of medicine has made wonderful strides in these latter years, but there were great men and master minds in the olden time.

HOW LOUISVILLE SUCCEEDED LEXINGTON AS A CENTER OF MEDICAL EDUCATION.*

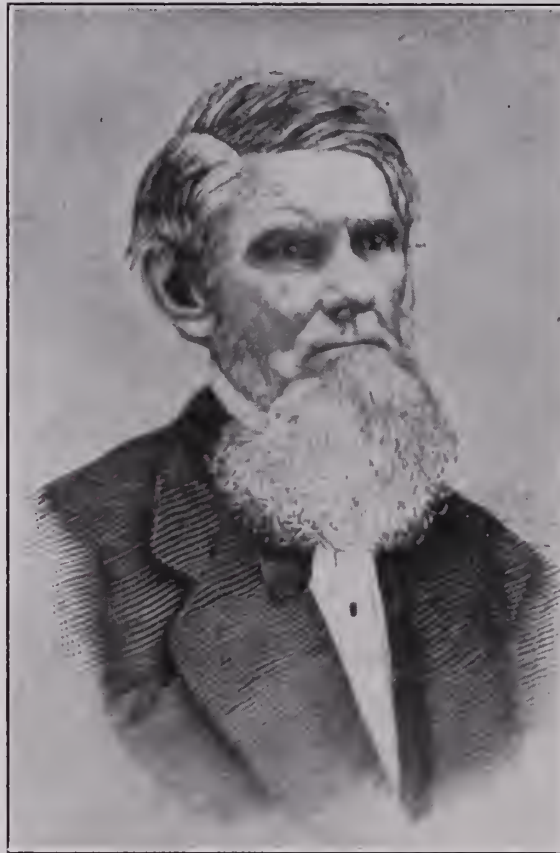
By LUNSFORD P. YANDELL, Sr., M.D.

Our country was slow to embark in the medical instruction of her own sons. A century and a half after the colonies were settled the medical students of America were still obliged to repair to the colleges of Europe for the completion of their studies. It was not until the University of Edinburgh had been attracting scores of young American physicians across the sea for forty years, that any serious effort was made to establish a medical school on our continent. This honor belongs to Dr. John Morgan, who, by an address remarkable for its earnest and sound argument, prevailed upon the trustees of the college of Philadelphia to found the institution now represented by the Medical Department of the University of Pennsylvania. This first American school of medicine was organized in 1765, while Dr. Franklin presided over the College. Three years afterwards a similar institution was founded in New York, but failed to command the success which has attended the Philadelphia school. A medical faculty was appointed in 1782 to give lectures on the different branches of medicine in Harvard University; and in 1804 Dr. John B. Davidge laid the foundation of the medical school at Baltimore. He had returned a few years previously from the University of Edinburgh, where he formed the resolution, in common with his fellow-students, Dr. Hosack, and Dr. Samuel Brown, of establishing a medical school in his native country. I have heard him relate, that the project appeared to the student of the old country extremely absurd, and they made great sport of the embryo professors of America. The opening of his enterprise was anything but auspicious; his first class numbered only six, and his second had but one addition to it. The rise of the other early American schools, though not quite so gradual as that of my old preceptor and friend, was by no means rapid when compared with those of our day. It remained for the West fully to develop the activity of such institutions.

The tide of immigration had been pouring into the Valley of the Mississippi for more than thirty years, and the then Western states were still without a medical school. Such students as could afford the necessary means resorted to the Atlantic colleges; those who were unable to incur the expense entered

upon the practice of their profession without the advantage of public instruction. Kentucky, the pioneer of the new states, took the lead in medical education. With whom the thought of founding a medical college in Lexington first originated,* it is perhaps impossible now to ascertain, but as early as 1816 some steps had been taken in that direction.

in the Faculty of the Medical Department of Transylvania University. These gentlemen delivered a course of lectures to a class of twenty students, of whom Dr. W. L. Sutton, the First President of the Kentucky Medical Society, is one of the surviving members. The result of this enterprise does not appear to have been satisfactory; troubles originated in



DOCTOR LUNSFORD P. VANDELL, Sr.

1805--1878

A teacher and writer of great industry and ability, and President of the State Medical Society at the time of his death.

In that year lectures were delivered by Dr. Wm. H. Richardson while yet an under-graduate in medicine. In 1817 he was associated with Dr. Benjamin W. Dudley, Dr. Daniel Drake, Dr. James Blythe, and James Overton,

*It would appear that Dr. Vandell was not advised of the fact that "Early in 1809 at the first meeting of the Trustees of the new Transylvania University, they instituted 'The Medical Department' of College of Transylvania, which subsequently became so prosperous and celebrated, by the appointment of Doctor Samuel Brown as Professor of Chemistry, Anatomy and Surgery, and Doctor Frederick Ridgely, as Professor of Materia Medica, Midwifery and Practice of Physic"; that both these gentlemen accepted the duties, lectures and instructions being actually given by them and their successors in the intervening years up to 1815, when the school was reorganized and put on a more permanent basis.

the Faculty, and the school was suspended after a single session.

In the summer of 1819 the Faculty was re-organized, Dr. Chas. Caldwell and Dr. Samuel Brown taking the place of Dr. Drake and Dr. Overton, the first of whom had in the meantime returned to Cincinnati, and the latter had removed to Nashville. Dr. Caldwell brought with him from Philadelphia a high reputation both as a writer and a lecturer. Dr. Brown was a man of showy parts, of varied learning, of fine person, and elegant address. Dr. Dudley had already given promise of that rare surgical skill which has since rendered him so distinguished. Dr. Richardson had

the reputation of being a successful practitioner of obstetrics, and was recommended by cordial and popular manners. Dr. Blythe, the professor of Chemistry, was a learned Presbyterian clergyman, and his connection with the school was calculated to conciliate that large and influential body of Christians.

Under the direction of a Faculty thus constituted it became at once manifest that the Medical Department of Transylvania University was soon to exhibit an example of

new enterprise and had in it all the excitement of novelty and hope. Its Faculty was ardent, zealous and gifted. It was situated in the midst of a wide country rapidly increasing in population. The first session of the school opened with a class of 37 pupils; its second class numbered 93; its third 138; its fourth, 171. Before the commencement of the fifth session, Dr. Drake, who had made an abortive effort to found a similar institution in Cincinnati, was united to the Faculty, as



DOCTOR DANIEL DRAKE

1785--1852

Easily one of the ablest and most versatile medical men of his age. A great teacher and writer, and author of "A Systematic Treatise on the Principal Diseases of the Interior Valley of North America," and other works of great value.

Dr

prosperity at that time unparalleled in the history of medical schools. Its location had great advantages at the time. Lexington, from its literary eminence, had acquired the title of "The Athens of the West." It was the commercial as well as the literary emporium of the Western States. The late Dr. Horace Holley, at that time President of the University, with powers of display seldom equalled, conferred upon the institution a remarkable lustre. The medical school was a

Professor of Materia Medica. The number of the succeeding class was 200; and that of the sixth, 234. At the end of this session, Dr. Brown resigned the chair of Theory and Practice of Medicine, to which Dr. Drake was transferred, and Dr. Chas. W. Short was elected Professor of Materia Medica and Medical Botany. The ensuing class, in the autumn of 1825, numbered 282 students. The one which followed was not so large, and the next declined to 190. At the termination of this ses-

sion, Dr. Drake resigned his professorship. In the summer of 1827, Dr. John Esten Cooke, who had attracted the attention of the profession by some able papers in the *Medical Recorder*, and by his "Pathology and Therapeutics," the first volume of which had just been published, was invited from Winchester, Virginia, to the chair of Theory and Practice. The number of students the following winter was only 150; but the next session exhibited an increase, and for several years the classes continued steadily to grow. In the spring of

the minds of the Faculty, that the school had filled up the measure of its usefulness. Lexington, the most eligible site for a medical school when this was organized, was now admitted to be deficient in some of the elements essential to the establishment of a great and enduring institution. With the advancement of medical science in our country it had ceased to be able to satisfy the demands of the profession. It had no hospital, and furnished very precarious and inadequate means for anatomical study. In the winter of 1835-36 it



DOCTOR JOHN ESTEN COOKE

1783--1853

1831, Dr. Blythe resigned the chair of Chemistry, and the writer of this narrative was appointed his successor, with the late Mr. H. Hulbert Eaton as assistant. Unfortunately for science, this promising young man was cut off after participating in a single course of lectures, dying of pulmonary consumption in the 23rd year of his age.

The institution in 1835 was again in a highly flourishing condition. Its classes had risen above 260. To the eye of the common observer all about it gave promise of stability; but appearances were deceptive, and in the midst of such success the conviction was forced upon

came to be felt and acknowledged by the Faculty that the department, if it was to be maintained in the position of ascendancy which it had enjoyed from the beginning, must be transferred to a situation possessing more advantages than were then afforded by that beautiful city. Louisville suggested itself to the mind of every member as a point combining all the facilities for a medical school, and accordingly in the spring of 1836 it was resolved, with entire unanimity, to attempt to remove it to this place.

When the period for carrying out this resolution arrived, it was ascertained that the

measure was impracticable; the professors might remove to Louisville, but the citizens of Lexington and the Trustees of the University would not entertain the proposition to transfer the Medical Department. The agitation of the question led to dissensions among the professors, and finally to a dissolution of the Faculty; three of the members, Dr. Dudley, Dr. Richardson, and Dr. Short remaining in Lexington. Dr. Caldwell, Dr. Cooke and myself accepting places in the Louisville Medical Institute.

The Medical Institute of Louisville was

ed by these resolutions of the citizens to grant the square bounded by Eighth and Ninth, and Chestnut and Magazine Streets, to the Managers of the Medical Institute; and they further resolved to erect necessary buildings for a Medical school at a cost not to exceed \$30,000, and to advance in cash for the purchase of a library, anatomical museum, and the requisite apparatus, an additional sum of \$20,000. On the 11th of April the Board met, and accepted the donation of the city. During the summer six professorships were filled, Dr. Miller, who resigned his chair



DOCTOR CHARLES CALDWELL

1772--1853

chartered by the Legislature of Kentucky on the 2nd of February, 1833, and various attempts were made without success to put it in operation; at length the citizens becoming interested in the project, a town meeting was held, at which on the 30th of March, 1837, it was resolved that there ought to be a college in the city of Louisville, with Medical and Law Departments, and that it was expedient that the Mayor and Council should proceed at once to endow the first of these.

The Mayor and the Council were prompt-

in order that the Board might be entirely unembarrassed in making their new arrangements, being appointed to the chair of Obstetrics, Dr. Cobb to that of Anatomy, and Dr. Joshua B. Flint to that of Surgery. To Dr. Caldwell, Dr. Cooke and myself were assigned the chairs which we had respectively held in Transylvania University, namely, Institutes of Medicine, Theory and Practice, and Chemistry. Subsequently I was transferred to the chair of Materia Medica, and for one

season delivered lectures on that branch as well as chemistry.

The first course of lectures in the Medical Institute was delivered in the upper rooms of the City Work-House, which stood upon the site of our present edifice, to a class of 80 students. The appearance and appointments of the old structure in which we were to commence our labors were unattractive, straitened, and comfortless enough; and now as I look back upon the new enterprise I can see

nati and accept the chair of Theory and Practice of Medicine there. One-half of the Faculty which had reared the school and conferred upon it a full share of its reputation, still remained identified with it. It had a widely extended, influential, and devoted corps of alumni upon which it could rely, and it had a name among the medical institutions of the country which the success of nineteen winters had been constantly strengthening and extending.



PROFESSOR SAMUEL D. GROSS

1805--1884

From a photograph made in 1860

One of the famous surgeons of the world, and a great teacher and author. One of the organizers and early Presidents of the State Medical Society of Kentucky, and the American Medical Association.

that there were discouragements attending it which might justify the misgivings of many of its friends. The Lexington school was again fully organized. The citizens were roused by the attempt to transfer to a rival city an institution which had been so long a cherished object of their pride, and were resolved to sustain it. Dr. Eberle, at that day one of the most popular authors and teachers in the country, had been induced to leave Cincin-

Such was the School in the face of which the Medical Institute of Louisville was to rise, nor was Transylvania the only powerful rival in its neighborhood. The Ohio Medical College, though crippled by the withdrawal of Dr. Eberle and Dr. Cobb, was again organized, and with many other advantages could boast of a reputation as ancient as that of the sister institution at Lexington. The Cincinnati Medical College was also contending vigorous-

ly for the first rank among Western Medical Schools, and when I tell you that Dr. Drake, Dr. Parker, of New York, Dr. McDowell, of St. Louis, the late Dr. Harrison, of Cincinnati, and Dr. James B. Rogers, of Philadelphia, Dr. Rives, now of the Ohio Medical College, and my colleague, Dr. Gross, composed its Faculty, you can judge with what chances there were of success. Not a few of our friends were dependent. It was doubted whether we should have any students at the time we proposed to commence our first course, and some of us were kindly advised to give up the project as hopeless.

But not so thought the Faculty. To their minds it was evident that the enterprise must prosper. It could not be doubted that Louisville, from its geographical position and many other natural advantages, must become the seat of a great medical school, and the citizens had wisely decreed the means necessary to its establishment.

Our first class, I have mentioned, numbered 80 students, of whom 27 received the degree of M. D. in the spring. The class at Lexington numbered 230, which was only about twelve short of the preceding class.

It was a notable effort to found the first medical school in the West. It placed a liberal medical education within the reach of hundreds of meritorious young men who must otherwise have grown old in their profession without its advantages. The Transylvania medical school was a source of substantial blessings to the country. They who founded it and by their labors gave to it its brilliant reputation, were pioneers in medical education, benefactors of their profession and their race, and as such their names will live in the memories of men.

Those who came to establish the medical school at Louisville were also pioneers. They were still bearing forward the light of our beneficent science in the direction in which the "Star of Empire" has so long held its way. When the steeple which surmounts this edifice was erected, it was the last reared in honor of medicine upon which the sun shone in his journey down the evening sky, the first to greet the traveler coming from the "far west." Now it is one of the old schools; so rapidly do such institutions grow up in our progressive country.

On the 22nd of February, 1838, the corner stone of this building was laid with Masonic honors, in the presence of a great concourse of citizens, and the second course of lectures was delivered in these rooms. At the close of the first session, it appearing desirable to fill the vacancy in the Faculty by the introduction of Dr. Short, who had again, after the dissolution of our faculty, accepted a chair in the Lexington school, I resigned the professorship of *Materia Medica* and was ap-

pointed by the Board of Trustees to the chair of Chemistry. The election of Dr. Short completed the organization of the Institute. A member of the Faculty was commissioned by the Trustees to visit Europe for the purpose of increasing the library, chemical apparatus, anatomical models and preparations, and other materials of illustration for the school. The second session opened under favorable circumstances. The new and splendid edifice presented a strong contrast to the old rooms in which the incipient exercises of the institution were conducted; and the fine library and suites of apparatus arrived from Europe in good season to render the preparation for teaching the several branches complete. The second class numbered 120.

In the summer of 1839, the Cincinnati Medical College suspended operations, and Dr. Drake, its founder, was elected Professor of Clinical Medicine and Pathological Anatomy in the Medical Institute, a chair created by the Board of Trustees, on the recommendation of the Faculty, for the purpose of securing the services of that experienced and able teacher. It is worthy of remark that although the effect of this innovation was to raise the tuition fees of the Institute above those of all the neighboring schools, it caused no abatement, but rather an increase in the ratio of its growth. The number of its third class was 205. At the end of this session Dr. Joshua B. Flint retired from the school, and was succeeded in the chair of Surgery by its present incumbent, Dr. Samuel D. Gross.

The class had now grown to be so large that the usual mode of giving clinical instruction, the students following the professors through the wards of the hospital, and catching, as they could, the remarks made at the bedside of the patients, was found to be ineffectual; and in order that this most important branch of medical teaching might be rendered efficient and useful, the Faculty determined, with the consent of the City Council, to erect a clinical theatre adjoining the Marine Hospital. The following course of lectures was delivered to 209 students, and no portion of it was more satisfactory than that which was given in the clinical amphitheatre. The effect of the improvement was felt to be most salutary. The succeeding class numbered 268.

In consequence of the embarrassed state of the country, the number of students declined the ensuing session, and was only 190; but the institution soon recovered from the temporary depression and the following years exhibited a rapid increase. Its sixth class reached 246; its seventh 290; and its eighth, 347. It was now confessedly ahead of all the neighboring schools, and probably behind none in the country except the two principal schools of Philadelphia.

During the winter of 1843-44, Dr. Cooke,

who had retired to a farm in the neighborhood of Louisville, gave notice to the Board of Managers that he would vacate his chair in the spring, a step which his declining health shortly afterwards would have rendered necessary. He was the first of those who had taken part in the organization of the school to resign his seat in it. The peculiar medical theories and practice of this original man have been extensively commented upon, and are known to every one who has read much of American medicine. Whatever may be the judgment of medical men concerning these,

sion, the Legislature of Kentucky granted a charter for the University of Louisville, of which the Medical Institute was constituted the Medical Department. By the provisions of the charter, the Board of Trustees were to be elected by the City Council, and to hold office for a limited period, instead of filling their own vacancies, and continuing in office for life, as under the original charter. The first class that assembled in the Medical Department of the University of Louisville numbered 353 students, and the second rose to 406. This was in 1847, ten years from the com-



DOCTOR AUSTIN FLINT, Sr.

1812--1886

there can be among those who have known him intimately but one opinion as to the purity and excellence of his character. However mistaken he may have been in any of his views, no one ever doubted his sincerity. No one ever associated long with him without the conviction that he was a just, upright, and thoroughly honest man. The feeble state of his health has compelled him entirely to abandon his profession, and for several years past he has lived on his farm, in Trimble county, on the banks of the Ohio.

In February, 1845, during its eighth ses-

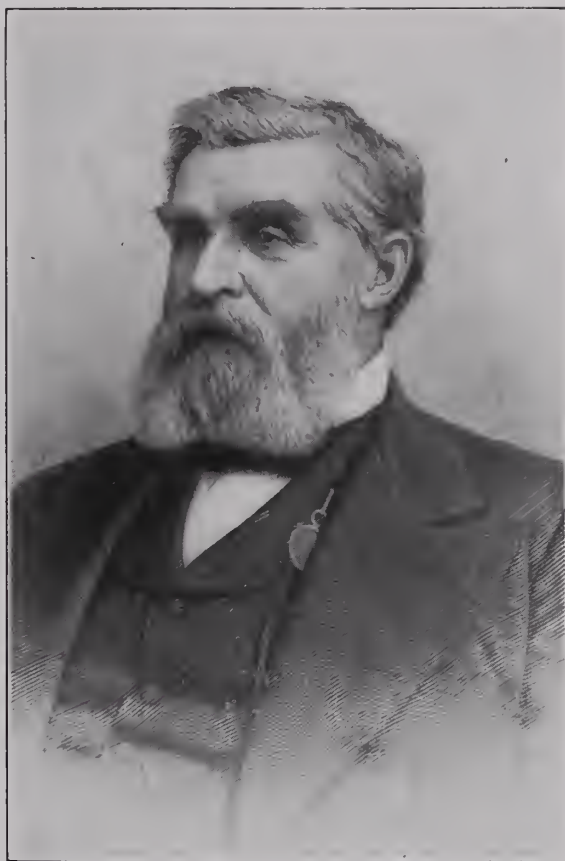
session, the Legislature of Kentucky granted a charter for the University of Louisville, of which the Medical Institute was constituted the Medical Department. By the provisions of the charter, the Board of Trustees were to be elected by the City Council, and to hold office for a limited period, instead of filling their own vacancies, and continuing in office for life, as under the original charter. The first class that assembled in the Medical Department of the University of Louisville numbered 353 students, and the second rose to 406. This was in 1847, ten years from the com-

mencement of the enterprise, and I suppose I am safe in saying, that no medical school ever attracted so many students in so short a time. The number, the ensuing session, was 333. Extensive changes in the Faculty took place after the close of this session. In February, 1849, Dr. Drake signified to the Board of Trustees that he would resign his professorship at the end of the term. Later in the season the chair held by Dr. Caldwell was vacated; and in June, Dr. Short carried into effect a wish which he had long indulged, of

retiring from the turmoil which seems to be inseparable from medical schools. These professors were all men experienced, learned, and widely known. Dr. Caldwell was for many years one of the chief ornaments of Transylvania University, and by his energy and industry, his great learning, and his eloquence, had contributed a full share to its rapid rise and wide popularity. He was far more actively concerned than any of his colleagues in procuring from the city of Louisville the noble

would have taken a high rank in any medical school. Dr. Short differed in the character of his mind from both of his distinguished colleagues, but possessed qualities which rendered him a most valuable officer. His high scientific attainments, the soundness of his judgment, his dignity and urbanity of manners, his amiable temper, and blameless life, added character and weight to the institution.

These eminent teachers were succeeded by Dr. Elisha Bartlett, Dr. Lewis Rogers, and Dr.



DOCTOR SAMUEL M. BEMISS.

1821-1884

A teacher in the University of Louisville in early life, and second State Registrar of Vital Statistics in Kentucky. Was a leader in the profession of New Orleans, both as a teacher and practitioner, and a member of the National Board of Health after leaving Louisville.

endowment of the Medical Institute, and his reputation for learning and originality had been of the greatest service to the institution in its earlier years. Dr. Drake was at the height of his popularity, and in the full maturity of his intellect. As a lecturer or writer, he had made himself known to every educated American physician. With an unfailing zeal in his profession, untiring industry, a mind singularly active, vigorous, and comprehensive, and an elegance which never failed to excite and gratify the interest of his pupils, he

Benjamin Silliman, Jr., the latter in the chair of Chemistry, the Board of Trustees having done me the honor to assign to me the department of Physiology and Pathological Anatomy. The influence of so extensive a revolution was feared by some, but the sequel proved that the institution had become sufficiently established in the confidence of the public to bear the change without loss. The number of the succeeding class was 376, a gain of more than forty upon the one of the

previous year, and the largest but one ever attracted to the University.

The prospects of the school were never brighter than they appeared to be at the close of that session. There was not a speck to be descried upon its horizon in any direction. Its Faculty was united and harmonious; its pupils had retired to their homes in the most favorable temper; it had been now for several

versity of New York. Dr. Drake was recalled by the Board to the professorship which he had formerly held, and Dr. Gross was succeeded by Dr. Paul F. Eve, of the Georgia Medical College, at Augusta. The number of students the session ensuing was 282.

At the close of his first course of lectures in New York, Dr. Gross returned to Louisville, and Dr. Eve resigned the chair of Surgery



DOCTOR TOBIAS GIBSON RICHARDSON.

1827-1892

Teacher, Author, Surgeon. One of the Founders of the Kentucky State Medical Society. One time President of the American Medical Association. The later years of his life spent in New Orleans.

years far in advance of all the western schools; all the omens were auspicious. But before the opening of another collegiate year, the Trustees were called upon to fill two vacancies in the faculty. Dr. Bartlett and Dr. Gross, late in the summer of 1850, resigned their places, and accepted chairs in the Uni-

versity of New York. Dr. Gross was re-elected in 1851, and Dr. Eve, who had generously relinquished a place to which he felt that his friend had stronger claims, was invited to a chair in the medical school about to be organized at Nashville. The number of the class, as you are aware, was 262.

HENRY MILLER, M. D.

By H. M. GOODMAN, M. D., Louisville.

Henry Miller was born in Glasgow, Kentucky, November 1, 1800. His father, who was one of the first three settlers of Glasgow, was a native of Maryland. After having received a good common school education, at the age of seventeen, he entered upon the study of medicine, in the office of Drs. Bainbridge and Gist, in his native town, where he remained two years. He then entered the Medical School of Transylvania University, in Lex

tute, the first school of Medicine founded in that city. The faculty with which the institution started was one of distinction, comprising Drs. Charles Caldwell, John Esten Cooke, Lunsford P. Vandell, who had been members of the Transylvania Medical School, and Drs. Cobb and Flint. The list was completed by the appointment of Dr. Henry Miller to the chair of Obstetrics. The school was, in 1846, merged into the University of Louisville, Dr. Miller retaining his professorship until 1858. Having served continuously for twenty-three years and feeling the need of a change, he,



DOCTOR HENRY MILLER

1800--1874

ington, where he graduated in 1821. Such was his proficiency that he was at once appointed demonstrator of anatomy, in which position he laid the foundation of the high reputation he achieved later. Subsequently, he attended a course of lectures in Philadelphia and, upon his return to Kentucky, began the practice of medicine in Glasgow. In 1827, he moved to Harrodsburg, Kentucky, and practiced his profession with success until 1835, when he was called to Louisville to aid in the organization of the Medical Insti-

in that year, resigned his chair and devoted himself to his private practice. In this, his great skill and thorough knowledge of his profession gave him a large patronage and he soon became a favorite family physician. In 1867, he was recalled to the institution, and was for two years, professor of medical and surgical diseases of women, when he again resigned. Subsequently, he accepted a similar chair in the Louisville Medical College, holding it at the time of his death, which occurred February 18, 1874.

Dr. Miller was an extensive writer upon medical topics and, in addition to many monographs on various subjects, was the author of two standard medical works. The first, entitled, "Theoretical and Practical Treatise on Human Parturition," was published in 1849, and the second, "Principles and Practice of Obstetrics," several years later. The latter became the text book in most of the schools of the day, and still ranks among the very first in this day medical literature, as a standard authority, especially the chapters relating to the Mechanism of Labor, which have been but slightly changed since he first published his views. He enjoyed to an unusual degree the satisfaction of being recognized and appreciated in his lifetime, instead of looking forward to posthumous fame. By both the medical fraternity and the laity, he was esteemed, honored and beloved. In addition to his membership in many local and state societies, he was a member of the American Medical Association, and its president in 1859. In religious association, he was a Presbyterian. His style was particularly terse and lucid, his judgment admirable, his success eminent. It is not too much to say that there is not a living pupil, of the thousands who listened to his lectures on uterine hemorrhage, who can not vividly recall the picture, when he said with characteristic earnestness, "the Hand,—the Hand,—Gentlemen."

His wife, to whom he was married June 24, 1824, was Miss Clarrissa Robinson, daughter of William and Clarrissa Robinson, of an old Virginia family. Of the children born to them six attained maturity. Dr. Wm. E. Miller, George Miller, Dr. Edward Miller, Mary Miller, Henrietta Miller, and Caroline D. Miller, wife of Dr. John Goodman of Louisville.

DR. THEODORE S. BELL.

By HENRY A. COTTELL, A.M., M.D. Louisville.

Theodore Stout Bell, philanthropist, physician, teacher, writer and philosopher, was born in Lexington, Kentucky, in 1807. He was of humble parentage and, losing his father in childhood, was put to work for the support of his widowed mother. He began life as a newsboy and later learned the tailoring trade. His love of learning soon asserted itself, and in spite of unfavorable surroundings he made real advancement in the acquisition of knowledge. The words of Edward Holmes, spoken of a famous old-world musical genius, appropriately apply to Bell: "Such a career is hardly to be conceived unsupported by the consciousness of a great destiny, and its secret sustainings from within." Indeed, the only evidence of vanity he ever displayed was in the exhibition of the needle with which

he supported himself and mother while he was acquiring the rudiments of his education.

He was ably assisted in his studies by Mr. James Logue, a learned teacher of Lexington, who without pay devoted his after school hours to teaching this boy, whose talents gave promise of a brilliant future. Later Bell studied with the great surgeon, Dudley, who found for him a way to enter the Transylvania School of Medicine, from which he graduated in the year 1832, and soon thereafter came to Louisville, where for 52 years he lived and labored for the fame of medicine and the glory of humanity. Though no politician there was no public measure for good that did not enlist his sympathy and support. Notably in this line was his effort to bring the Transylvania University to Louisville. This failing, he was largely instrumental in the creation of the Louisville Medical Institute, which called Caldwell, Yandell and Cooke to Louisville, and out of which grew the University of Louisville. He wrote voluminously in behalf of the development of his City, and in favor of public improvements.

He was editorially connected with the *Louisville Journal* and was the family physician of its great editor, George D. Prentice. In 1838, with Dr. L. P. Yandell, Sr., he founded the *Louisville Medical Journal* and later, in 1840-41, with Yandell and Dr. Henry Miller, established the *Western Journal of Medicine and Surgery*.

In 1857 he was made professor of the Science and Art of Medicine and Public Hygiene in the University of Louisville, a position which he held until his death. In 1833 he married Susanne Hewitt, a sister of one of Louisville's most famous physicians, Dr. R. C. Hewitt. To this union was born one child, a son, Carson Hewitt Bell. In 1861 he was made president of the Kentucky branch of the United States Sanitary Commission. The Kentucky Institute for the Blind, for whose promotion he labored with fond solicitude, under his influence and wise counsel as president of its board of visitors, became one of the foremost institutions of its kind in America.

Dr. Bell was a man of vast and varied learning, and a writer of peculiar grace and force. His medical writings embrace a wide range of topics but his favorite themes were hygiene and the epidemic diseases. His career antedated the bacteriological era. It is true that the *Bacillus Anthracis* had been seen in the blood of infected animals by Pollender in 1849 and by Davaine in 1850, who, in 1863, demonstrated its causal relation to Charbon, and that Pasteur in 1879 established its identity by pure culture, and that Koch had discovered the *bacillus tuberculosis* in 1882, but Bell did not live to see the era of bacteriological medicine, nor did he ever come to a

clear understanding of the causal relation of microbes to anthrax and tuberculosis; while he scorned the doctrine that epidemic diseases like cholera, yellow fever, the bubonic plague, and malaria, could be caused by anything but his three etiological factors, heat, moisture, and vegetable decomposition, and the statement that malaria is caused by a plasmodium carried by the mosquito, would have shocked his nerves beyond recovery. So powerfully, and so plausibly did Dr. Bell urge and seemingly demonstrate his erroneous theories that

Louisville. His memorable "isothermic line" so far as it defined the limits of the great epidemics, like Mason and Dixon's Line and its supposed limitation of the area of slavery, went into the limbo of the unproved and impracticable. Dr. Bell was a savage controversialist and in his many word battles generally downed his opponent with the scorn of invective sarcasm, yet he was gentle and affectionate in disposition, loving his friends and not hating his enemies.

He was an almost incessant reader, having



DOCTOR THEODORE S. BELL

1807--1884

they attracted the attention of medical magnates abroad and caused some of his students to go to their death in certain yellow fever, and cholera, epidemics of the South, vainly trusting in his sovereign prophylactics, to-wit: high sleeping apartments, and quinine; while many of our citizens lost their lives in the epidemic of 1878, because of his unequivocal contention that yellow fever could not develop a single indigenous case, in a place of the latitude, and daily mean temperature, of

his tables and even his bed piled with books which he read and studied far into the night, allowing himself only four hours of the twenty-four for sleep.

Dr. Bell was, in the true sense of the word, a Christian man. No life more fully than his illustrated the teachings of Jesus Christ. He sold all that he had and gave to the poor, and literally took no thought for the morrow, knowing that He who marks the fall of the sparrow and heeds the young raven's cry for

food, would keep his covenant with his aged, faithful servant.

He died alone and unattended, but this was as he wished to die. At least it was his oft expressed desire that he might fall with the harness on. On the day before his death he was, though in very feeble health, attending to his practice, and on the morning when his dead body was found, it was evident from the condition of the room that he had passed much of the night at his desk with his books, as was his wont. This seeming austerity of manner argues none in heart. No man had more friends than Dr. Bell; no man loved his friends better than he, or was better loved in return by his friends. His death, although his span of life had measured almost the full limit of the Psalmist, carried sorrow to very many hearts, and seem to awaken in the whole community the sense of an irreparable loss. Thousands thronged to view his body as it lay in state, and his obsequies were those of a patriarch.

It is fitting that we close with the eloquent tribute written by Dr. E. S. Gaillard, who, during his sojourn in Louisville, was editor of the *Richmond and Louisville Medical Journal*, and a professor in a rival school. He had more than one tilt with Bell, who had scorned him most unmercifully. Dr. Gaillard's feet were on the brink of the dark river when he wrote this noble, just and forgiving tribute: *De mortuis nil nisi bonum*:

"He deserved well of his generation, and whatever may be the encomiums it shall render, the just will say that he was worthy of them all. Even those who were not permitted to be the intimates of Dr. Bell must feel sad over the end of such a life; over the lonely termination of a life so strong, so useful, so worthy, so admirable; this sad, almost mysterious passing away of a rugged, lonely, strong and genuine man. How like his last days to those of Thomas Carlyle: secluded, sad, yet laborious, independent, useful. The last day, the last hours, spent in work; and when the golden bowl was broken it was, as ever, beside the fountain where it had so often been filled to overflowing. Where else should the mental laborer wish to die, if not amid the silent companions of his life-work? A lonely, solitary death; but an eloquent one, for it declares the choice and the character of a well-spent life!"

DAVID W. YANDELL, M. D., LL. D.

A Loving Tribute by His Daughter,
MRS. MARIA YANDELL ROBERTS.

David Wendel Yandell was born on the 4th day of September, 1826, at Craggy Bluff, his father's country home, six miles from Murfreesboro, Tennessee, a spot whereon was fought one of the bloodiest battles of the Civil War.

The ancestors of the Yandell's came from England and settled in South Carolina. Whether they were of Captain Christopher Newport's importation or not, we do not know; but that they were chivalry of the chivalrous is well attested by the fine intellect, manly beauty, personal courage, and gentlemanly bearing of all who have held this honored name. For two generations, in this country, his family had been distinguished in medicine. His grandfather, Dr. Wilson Yandell, was one of the most noted physicians of his locality. His father was the eminent Dr. Lunsford Pitts Yandell, of blessed memory, a pioneer of medical education in the West, a professor in Old Transylvania and one of the founders of the Medical Department of the University of Louisville. His mother was Susan Juliet Wendel, whose father David Wendel, was a substantial Merchant of Murfreesboro, a man of high standing and probity. In her were combined all nature's choicest gifts. With uncommon beauty of form and features were united rare intellectual endowments. To David descended the ancestral gifts in measure full and overflowing. In him was the culmination of the genius of the Yandell family.

When five years of age, his family moved to the heart of the bluegrass region, "Classic Lexington." Doubtless it was here that Yandell laid the foundation for that fondness for horses, dogs, the hunt and the chase which were to be the chief sources of his recreation during his long and laborious professional career. At the age of eleven, the family moved to Louisville, where David was placed under the care of the famous educator, Noble Butler. Later he attended several sessions at Centre College, Danville, where he seems not to have been a methodical student, for he left the school without a diploma and entered upon the study of medicine, under his father's direction, in the University of Louisville. He graduated from this school in 1846. Like Goldsmith, Beethoven, Scott and other great men, he is said not to have been a brilliant student. It was even hinted, by enemies, of course, that he graduated in medicine only by "the grace of God and the good will of the faculty," and upon the further condition that he should go at once to Europe and make up for lost time. Be this as it may, the young

fledgling in medicine loved science and thirsted for knowledge; and these qualities, reinforced by keen powers of observation, a marvelously retentive memory, a philosophic faculty for digesting and assimilating what he saw, heard and read, enabled him to acquire a finished culture and an erudition in things medical and non-medical of imposing breadth and depth. His sojourn in Europe lasted about two years. During this time, which was spent chiefly in London, Dublin and Paris, he studied medicine, learned the

this series, Dr. Yandell showed that a saying he was wont to quote in after years was not the maxim of a flippant tongue, but a real working formula, "I am a man, and think nothing foreign to me which pertains to humanity."

The letters show not only a knowledge of men, their arts and institutions, remarkable in a young man of twenty, but a command of language and a finished style seldom seen in one so young. The letters pertaining to his profession were written in 1847, during the



DOCTOR DAVID W. YANDELL

1826--1898

A leading surgeon of Louisville, a great teacher, editor and orator, and President of the American Medical Association.

French language, and acquired much of that knowledge of men, manners and customs which made him the wonder of all who knew him in subsequent years. This period is marked by two series of letters. One was on the people and their institutions. It was contributed to the *Louisville Journal*, which was edited by George D. Prentice. The other was on Medicine, and was published in the *Western Medical Journal*, edited by Drs. Drake, L. P. Yandell and Colescott. In the first of

second year of his pilgrimage. They are in the style of a master, full of facts, common sense and philosophic comment. They are classics in medical literature. But the power and perspicacity of his style "grew with his growth and strengthened with his strength," until in later life his forceful diction and power of condensation, clearness and brilliancy rivaled the classic periods of Sir Thomas Watson, or the glowing sentences of Macauley.

His European sojourn ended, Yandell returned to Louisville and began in earnest the practice of his profession. Young, brilliant, incisive, with a charming presence and address and fine professional equipment, he was soon well upon the way to success. He was appointed demonstrator of anatomy in his Alma Mater, and in this office acquired that intimate knowledge of the human body and that deftness of hand which in time made him *facile princeps* in surgery. In 1851, his health gave way and compelled him to relinquish, for a time, professional work. Buying a farm near Nashville, Tennessee, he devoted two years to the pursuit of agriculture.

Retrieving health in his country retreat, Yandell came back to Louisville and entered upon his professional work with renewed vigor and a most phenomenal success. It was at this time that he established "The Stokes Dispensary," and thus became the founder of a clinical teaching in the West. His practice grew to imposing proportions and he soon made for himself a great name as a teacher of medicine. He was soon made professor of Clinical Medicine in the University. His work here was destined to be brief. The Civil War was upon the country, and the young doctor became a soldier, casting his lot with the Southern cause. He enlisted at Bowling Green under General Buckner, but was soon transferred to General Hardee's command, from which he was taken by General Albert Sidney Johnston, who made him medical director of the department of the West. Dr. Yandell continued to fill the high office of medical director till the close of the war, serving successively on the staffs of Generals Beauregard, Hardee, Joseph E. Johnston and Kirby Smith. He was in the battles of Shiloh, Murfreesboro and Chickamauga. He was always a soldier of soldiers, calm and brave in the face of danger, and unflinching to duty. His department was admitted to be one of the best ordered in the service.

At the close of the war, Dr. Yandell returned to Louisville, where he was welcomed alike by Unionists and Confederates. A meeting of the American Medical Association was appointed to take place in Cincinnati in 1865. Between the victorious Unionists and the conquered Confederates, the feeling was intense and bitter, and the gap in friendship, already wide, was widening. Dr. Yandell took the initiative in "shaking hands over the bloody chasm," with his northern brethren. In a noble, peace-making speech, wherein he nominated his great master, Dr. Gross, for the presidency, he carried the day for harmony, hatred was deposed, and brotherly love enthroned. Thus the medical profession was the first to substitute the white banner of peace for the blood-stained ensign of war. At

this meeting, Dr. Yandell was elected one of the four vice-presidents of the Association.

In 1867, Dr. Yandell was elected to the chair of the Science and Practice of Medicine in the University. In 1869, he was made professor of Clinical Surgery, a chair which he held till the close of his earthly career. As a teacher of clinical surgery, he probably had no superior in the world. Tall, Apollo-like in form, graceful, handsome, not selfconscious, with flowing chestnut locks, deep brown, penetrating eyes, a face lined by thought, and so muscled as to express every gamut of emotion from smiles and tears to tempestuous passion, with a rich, sonorous, baritone voice modulated to every mood, and with gesture, pose and action suited to the word, he was an orator of overwhelming power.

As a surgeon, Dr. Yandell was pre-eminent. In operating, he cut to the line and to the required depth with geometrical precision. His dressings were beautiful, while his treatment of wounds, surgical and accidental, was characterized by a scrupulous cleanliness which seemed nothing less than a prophecy of the since splendid triumphs of aseptic surgery. His gentleness, tenderness and sympathy in dealing with the sick were proverbial all over the wide field of his great practice. He was a wit and had he been so minded might have entered this field of literature in successful rivalry with Douglas Jerrold, Artemus Ward, Josh Billings, Mark Twain and their like. He was a royal host. Whenever a dignitary was to be entertained by the City, Yandell always headed the committee of entertainment. His fame as a conversationalist was co-extensive with the English-speaking profession.

In 1870, Dr. Yandell, in conjunction with Dr. Theophilus Parvin, established the *American Practitioner*, which at once took a commanding position in medical literature and continued to influence medical opinion for sixteen years, when it was combined with the *Medical News*. As an editor he was conscientious and painstaking. He was a pungent and witty paragraphist. One of his own scientific papers, published in the second volume of the *Practitioner*, has become classic in medical literature. It is an analysis of 415 cases of tetanus. The work was done with the assistance of the late Dr. R. O. Cowling. The conclusions to which this analysis led have been quoted in nearly every great work in general surgery that has appeared since 1870. In 1871, Dr. Yandell was elected president of the American Medical Association, the highest honor that can be conferred upon a physician. He presided at the subsequent meeting with so much grace, dignity and ability that the celebrated Dr. Bowditch, of Boston, publicly expressed the wish that he might be made president of the Association for life.

In 1870, Dr. Yandell again visited Europe,

where he wrote another series of sprightly and instructive letters, which were published in his own journal of that year. His last visit to Europe was in 1880. In 1886, he was made Surgeon-General of the State Guard. In 1889, he was elected President of the American Surgical Association. His address as retiring president of that body, at its meeting in Washington, in 1890, was on Pioneer Surgery in Kentucky. It is exquisitely written, and recites the great deeds of Brashear, McDowell and Dudley. Just about this time he was made a representative of the American Medical Association to the medical societies of Europe. He was also a fellow of the Medical Society of London, a member of the Medico-Chirurgical Society, showing how the European profession recognized his position in the medical world.

Hunting was his favorite pastime. He had hunted from Maine to Georgia, from the Yellowstone to the Rio Grande, from the Bear-grass to the Sacramento. Among the fellows of his field sports were found celebrities, home and foreign, of every calling and rank, from common life to royalty.

Dr. Yandell was a good fighter and a fair hater. He could give and take hard blows, but he loved with a great heart and with a constancy that knew no change. His reverent regard for his great master, Dr. Gross, attests this truth. This love began when Gross was a Professor in the University, young, inexperienced, unknown to fame, and when Yandell was his student and assistant. The love was returned by the master in good measure, and when the master died, Dr. Yandell crystallized his memory in an epitaph, engraved on the tomb of Dr. Gross, which will live among epitaphs so long as our language shall last.

Dr. Gross and Dr. Yandell, master and pupil, "were lovely and pleasant in their lives," and let us hope that in death they are not divided; for of them it may be said with equal truth as of Saul and Jonathan, "they were swifter than eagles; they were stronger than lions."

It was now the beginning of the last decade of the century, and Dr. Yandell was an old man. Though erect in body and sage and eloquent in conversation, he felt, and those who loved him could see, that the fiery splendor of his wonderful soul must ere long "fall into abatement and low price."

He seldom went out after night, was less attentive to practice, had less confidence in operating and wrote but little. He continued, however, to find solace in his books, bower, or fireside, and leaned more upon the bosom of his trusted household, where loving hearts and willing hands were ever ready to anticipate his every behest, to lighten the burden of accumulating years, and make smooth and

beautiful the sunset of his devoted life. He died on the second of May, 1898, at his home, which had been his own and his father's, since 1848.

EARLY HISTORY OF OVARIOTOMY IN LOUISVILLE.*

By DAVID W. YANDELL, M. D.

It may be remembered by some members now present that in a paper entitled an "Abstract of Six Cases of Ovariotomy," which I had the honor of reading at the last annual meeting of the Society, I included a case where the operation was incomplete, by reason of the adhesions making it impossible to remove the cyst. I will not repeat here what I said then, but will take up the case where I left it at that time.

The tumor continued to refill, and discharged great quantities of purulent fluid. Almost every known antiseptic and astringent injection was employed, but without avail. A large drainage-tube constantly worn became indispensable; frequent cleansing of the cyst was equally so. The patient, however, regained her health, and went to her home, in Illinois, in the summer. She has continued in good general health since, though unable to give up the drainage-tube until a few months ago, when it came out; and being unable to re-introduce it, she has since gone without it, while the cyst had not appreciably refilled. I hardly dare hope, however, that the cure will be permanent.

I have performed ovariotomy but three times since I had the honor to be appointed a special committee on that subject. One of these, performed on a lady aged sixty from Lexington, Ky, and kindly sent to me by the late lamented Prof. Bush and Dr. Skillman, was successful, the patient returning home in six weeks after having a tumor removed which with its contents weighed one hundred and fourteen pounds.

The second and third cases terminated very differently. The second case was placed in my care by Dr. Durrett, a medical friend living near Louisville. The patient was an unmarried lady, aged nineteen, of excellent constitution and health, from Anderson County, Kentucky. The tumor had been first noticed about two years before, had grown very slowly until a few months prior to its removal, and had been unattended by any severe attacks of abdominal pain, or until recently by appreciable constitutional disturbance. The abdomen was opened by the long incision; the contents of the tumor, which consisted of a straw-colored albuminous fluid, were drawn off, and the cysts removed with greater ease

*Read before the State Medical Society at Henderson in 1875.

than I had ever met with in any previous operation. There were no adhesions. It was not necessary to carry even a finger into the abdominal cavity. The tumor was composed of one large and several smaller cysts, and weighed along with its contents about twenty pounds. On the second day after the operation peritonitis set in, and in two more days proved fatal.

The third case was sent to me from Mississippi, and was in the person of a married woman, aged fifty, a mother, who had noticed an abdominal growth for some years before applying to me. It had been tapped many times, and large quantities of fluid had been removed. For many months before I saw her theappings were required to be made in the epigastric region; for, if made below that locality, the amount of fluid which flowed away was too small to give any relief to the abdominal tension and dyspnoea, both of which at times were extreme. The lady was full of courage and of hope, with first-rate appetite and very fair general health. An incision through the abdominal walls revealed a multilocular tumor, which was so generally and firmly adherent that no amount of such skill as I possessed enabled me to detach it sufficiently to allow of the introduction of even the half of my hand. The tumor was tapped, but only a small amount of jelly-like fluid escaped. The gentlemen present all concurring that the operation could not be completed, the wound was carefully closed in the usual way. The patient experienced but little shock; but when made aware of the failure to remove the tumor she expressed extreme disappointment, soon became greatly depressed, and abandoned all hope, if not also all desire, of recovery. She died of peritonitis on the fourth day. Prof. Cowling, Dr. Roberts and myself were occupied for more than an hour after her death in removing the tumor, which, originating in the left ovary, was attached literally to everything in the abdominal cavity except the stomach. On examination it proved to be a mixed tumor—partly colloid, partly almost solid.

These three cases, with the six previously reported, give me a total of nine cases, with five recoveries.

In order to add to the interest of a report which, if it embraced an account only of my own work in this field within a twelvemonth, would be but a poor return for the honor done me by the society, I have endeavored to gather a brief history of the operation of ovariectomy as it has been done in the city of Louisville and the county of Jefferson. If I accomplish no other result by this undertaking, I shall at least lighten the labors of my successors in this field, by furnishing them in an accessible form with the statistics of the operation in this locality up to this date.

The first ovariectomy performed in the city of Louisville was in 1848, and was done by the late Prof. Henry Miller; the second was in 1840, by Prof. Gross; the third was in the same year, by Prof. Bayless. Dr. Miller did his second operation in 1859, his third in 1860, and all these were successful. Between the latter period and 1868, he operated on three other cases, all of which terminated fatally. Prof. Middleton Goldsmith did ovariectomy once in this city while residing here, but in what year I have been unable to ascertain. The result I learn, however, was unfortunate. The late Prof. Bayless operated five times in this city with a fatal result in every case. Dr. McLean, then professor of surgery in the Kentucky School of Medicine, and an operator of undoubted skill, operated in 1869. The patient, who was a young unmarried woman, resided in Louisville. Prof. McLean made the short incision, and removed a unilocular tumor, which was without adhesions. Death occurred in a few hours from shock.

Dr. Garvin has given me the following account of his first and only case. Patient unmarried, aged thirty years, healthy; tumor first observed two years before operation, which was done in 1869; long incision; extensive adhesions; tumor multilocular; pedicle long, secured by ligature. Death in nine hours from shock.

Through the kindness of Dr. Thos. J. Griffiths I have the following brief outlines of a case occurring in his practice, and operated on in 1872 by Dr. W. H. Newman, formerly of this city. Patient aged forty-four years, married; observed tumor four years before; had been tapped three times; long incision; no adhesions; tumor unilocular; pedicle secured by ligature; extra-peritoneal. Dr. N., being of the opinion that the fatality which had attended ovariectomy in Louisville might perhaps be due in some degree to the nausea which so often follows chloroform narcosis, operated without an anesthetic. His patient died two days after of exhaustion.

My friend Dr. E. O. Brown has had one case of ovariectomy in his practice, the operation, at his request, having been performed by Professor J. M. Keller in November, 1873. The patient was married and aged thirty-five years. The tumor was multilocular; long incision; ligature: extra-peritoneal. The patient died in about thirty hours.

Prof. Cowling has operated twice, both cases proving fatal. Prof. Ireland has operated once. The subject was forty-three years old, married; had noticed the tumor for several years. On one occasion, one or more of the cysts had burst, the fluid escaping into the peritoneal cavity with evident diminution in the size of the tumor. She had at this time rigors, sinking, extreme abdominal pain, and other symptoms of peritonitis. Some

months after this she was tapped and the fluid in the peritoneum withdrawn. Ninety days subsequent to the tapping the tumor was removed through the long incision and the pedicle tied externally. There were extensive adhesions. The patient recovered well from the chloroform, and for four hours was comfortable. She then vomited and experienced a gush of fluid from the wound. This she mistook for blood, and was seized with the apprehension of sudden dissolution. Although assured that no hemorrhage had taken place, she grew cold, the pulse sank, and in spite of well-directed treatment she expired within twenty hours. The cyst contained a bunch of hair as large as the fist, and several well-formed teeth, the roots of which were imbedded in the cyst walls.

Prof. A. B. Cook operated on the following case in 1871: Mrs. —, age thirty years, the mother of three children, the youngest eighteen months old, had observed an abdominal tumor six months before. One of the cysts was emptied by the aspirator of six quarts of purulent fluid. A month later a multilocular tumor was removed by the long incision. There were very firm adhesions, embracing a large portion of the parietal peritoneum, the

ascending and descending colon, and portions of the small intestines. The pedicle was short, was secured by ligature and dropped back into the abdomen, the ends of the ligature being brought out at lower angle of wound. Death ensued in seventy-two hours from shock. The autopsy revealed that the abdominal wound had united by first intention. Those portions of the peritoneum and intestines which had been adherent to the tumor were glued together by plastic fibrin; the pedicle was well glazed. There were no evidences anywhere of undue inflammatory action, and but a few spoonfuls of serum in the pelvic cavity.

Dr. W. L. Atlee operated in 1872 in this city on a middle-aged unmarried lady, removing a unilocular unadherent tumor by the small incision. The patient died in about seventy hours from exhaustion.

Dr. Dunlap, of Ohio, removed some time during the war an ovarian tumor in this city with a successful result.

It will thus be seen that ovariectomy has been done in Louisville and Jefferson County thirty-six times, resulting in nine recoveries and twenty-seven deaths.



IV. THE GENERAL KENTUCKY GROUP

FOREWORD

The arrangement adopted for this group, as is true to an extent of all of the others, involves an unavoidable anachronism. In fact, but for the convenience of the reader, and a natural tendency of writers and speakers to complicate the simplest subjects by attempts at division and classification, all of the biographies and papers contained in this volume might well have been placed in this one general group.

Besides, broadly considered, there was much in common in both the origin and accomplishments of these remarkable men. Nearly all of them sprang from what is distinctly known in this part of the Union as the cavalier class. The office of the preceptor, rather than the medical school, as it is to-day, was then the portal to the profession, and only those were admitted to the study of medicine who either came of good families and had ability, or who themselves had exceptional ability and character; which always presupposed a far higher education than was required for entrance to the medical schools during and for a long period after the civil war. Admitted to the study of medicine after such tests, the training was far more thorough and practical than that of the commercial medical schools of the after the war regime. Such a student handled, compounded, often gathered, the drugs, and, incidentally, was something of a botanist and nature student, and he was mercilessly drilled in anatomy, physiology and the other fundamental branches, and difficult obstetrical operations and other practice, and scarcely less important, was a constant observer, often took a modest part in the simple and natural, but highly affable, social methods which obtained in the conduct of practice in that day, both in the office of the physician and in the homes of his patrons. After an extended apprenticeship of this practical kind, all who could do so attended one or more sessions at one of the two or three high grade medical schools of this country, while a fortunate few, like Brashear, McDowell, Dudley and Brown availed themselves of the best foreign schools and travel before considering their education complete.

With such an origin, advantages and attainments, the physician then was a self-respecting and highly respected man, somewhat

opinionated and dogmatic it may be, but, none the less on that account, recognized as one of the leaders of thought and of public affairs in his community. In the days of slavery in Kentucky there was little or no charity practice for him to do, except for a few worthy widows and clergymen, upon whom he considered it a privilege to attend. In striking contrast with the present day experience with the colored race, it was a common saying then "that a negro riding up to a doctor's office on a mule to call him to visit a patient, white or black, on any plantation, was the equivalent to him of two guarantees, the dandy and his mount, that he would be paid for his services;" and, all things considered, he was paid far better fees than his successor of this day. As a result of these conditions a few years of practice usually sufficed to make him financially independent; he rode the finest and best caparisoned horses, had the choicest man-servant to care for his clothes and person, and his home, one of the best of the community, was usually a centre of culture and refinement. And this financial independence, as it is to-day, was as important to the community as to himself, because it made it possible for him to have the kind of library and instrumental equipment which fitted him to meet any emergency with which he was confronted in his life-saving work, as these biographies show that he did with great intelligence and courage.

And, using this much abused term in its broadest and best sense, these were highly educated men. Herbert Spencer argues with indisputable power and logic that, "To prepare us for complete living—how to use all our faculties to the greatest advantage of ourselves and others—is the function which education has to discharge; and the only rational mode of judging of any educational course is, to judge in what degree it discharges such function." That is, to use the words of the Master, the last and best of all authorities, "By their fruits shall ye know them."

Measured by these standards, fixed by the highest authorities on education and its uses, or by any other, as relates to our profession, which has regard for utility and humanity how do these Kentucky pioneers compare with the erudite medical savants of all the ages which preceded them. "Look on this picture and then on that." From the founding of the first European medical school at the

University of Salerno in the twelfth century, not only to the day McDowell saw Mrs. Crawford in what was then the wilds of Green County, in 1790, but until almost a generation afterwards when scholarly incredulity as to the work of this master mind in this western wilderness was overcome, countless thousands of women with ovarian tumors must have come under the observation of the university-bred scholars of Rome, Vienna, Paris, London, Edinburgh, and the other great medical centres, and gone on to their miserable deaths without so much as an effective suggestion, even for the mitigation of these conditions, and, with a proper modification of expression, the same may be said in a degree of the work of Dudley, Brashear, Bradford and others.

How did these forbears of ours, these pioneers, succeed where through countless ages, all others had failed? Why did they, like Columbus, embark o'er a trackless ocean to discover new worlds in medicine and surgery, and why, like him, did they scorn derision and incredulity until they had not only discovered these worlds, but had established the verity and value of their discoveries? What was the real basis of their courage and success? In a word, what was there in them not found in other members of our profession of all the ages who had preceded them? Was there something superior in the fiber of their more remote ancestors, mothers as well as fathers,

who courageously emigrated to this new world; or still more, was such fiber or qualities developed and intensified in their parents who faced the denizens of the untrodden forests, savage and beast, on their way to, and about their settlements in Kentucky, or by their birth and growth amidst such surroundings and dangers? Did they gain such mental momentum and grasp in overcoming difficulties encountered in laborious self-education that it carried them over or through the obstacles which stood in the way of their discoveries? Or was there something in the Silurian or Devonian rocks and measures they trod, or in the water or food impregnated by them, which built upon the ancestry referred to and developed a still higher human product, as seems to be shown in the lives of Clay, Crittenden, Breckinridge and other of our great leaders in public affairs, and in horses and other high bred animals in Kentucky. Or, as seems more probable, was it a fortunate combination of all these ancestries, surroundings and influences, which brought such boons to suffering humanity, and such an inheritance to us? Humanity is receiving its full measure of the benefits, and it behooves us to so order our lives, and professional accomplishments that we shall prove worthy to build and improve upon this inheritance.

J. N. McCORMACK



THE BIRTH OF THE KENTUCKY STATE MEDICAL SOCIETY.*

MINUTES OF ORGANIZATION CONVENTION PRE- CEDING FIRST ANNUAL MEETING.

At a convention of the Physicians of Kentucky, held in the Senate Chamber at Frankfort, on the 1st day of October, 1851, 10 o'clock A. M., Dr. W. L. Sutton, of Georgetown, was called to the chair, and Drs. E. H. Watson and J. M. Mills, of Frankfort, appointed Secretaries.

On motion, a committee, consisting of Drs.

D. Thompson, R. J. Breckinridge, Jr., N. B. Anderson and J. B. Flint, of Louisville; E. D. Foree, Jefferson County; J. Dudley and J. P. Letcher, Nicholasville; W. L. Sutton, Henry Craig, and John D. Winston, Georgetown; C. H. Spillman, Harrodsburg; W. R. Evans, Mercer County; A. Evans, Covington; W. R. Chew, Midway; George B. Harrison, Fayette County; W. S. Chipley and D. J. Ayers, Lexington; W. C. Sneed, H. Rodman, C. C. Phythian, E. H. Watson, Ben Monroe, Jr., J. M. Mills, Joseph G. Roberts, and Ben Hensley, Frankfort; L. Y. Hodges, Franklin County; E. H. Black and James R. Adams,



DOCTOR WILLIAM L. SUTTON

1797--1861

One of the leading spirits in organizing the State Medical Society, and its first President. It was due to his influence mainly that the first law was passed requiring the registration of births and deaths, and he was the first State Registrar of Vital Statistics and published valuable reports for a number of years.

Chipley, Evans, and Breckinridge, was appointed to ascertain the names and localities of the physicians present, who reported the following:

Drs. S. D. Gross, Henry Miller, W. H. Miller, David W. Yandell, T. G. Richardson, D.

Scott County; Joshua Gore, Nelson County; D. L. Slaughter and R. W. Glass, Shelbyville; L. G. Ray and Edward Ingles, Paris, and E. C. Drane, Henry County.

Dr. Flint offered the following resolution: Resolved, That ————— be a committee to report to this Convention a suitable address to the profession of the State, calling upon

*Reprint from the *Medical News and Library*, January 1853.

them to assemble at such time and place as this meeting may advise, for the purpose of organizing a permanent State Medical Society; and that, in the meantime, we take steps at once to connect the profession of our State with the national organization, by appointing delegates to attend the next annual meeting of the American Medical Association.

Dr. Breckinridge offered the following as a substitute for the resolution of Dr. Flint. Strike out all after the word resolved, and insert the following:

That a committee be appointed to report the order of business for the convention now assembled.

The original resolution and substitute were both laid on the table, and a committee consisting of Drs. Chipley, Spillman and A. Evans, Dudley and Sneed, was appointed to draft a constitution for the formation of a State Medical Society. The Convention adjourned until half past 2 o'clock.

Half Past 2 O'Clock P. M.

The Convention was called to order by the President. Dr. Chipley, from the committee appointed to draft a constitution, presented the following report, which, on motion of Dr. Gross, was received.*

The reported constitution was taken up, each article separately considered, and after slight amendments, was adopted as a whole.

On motion of Dr. Gross, a committee, consisting of one from each city and county now represented, and entitled to a representative in the State Legislature, was appointed to nominate officers of the Society for the present year.

The following gentlemen were appointed: Dr. Breckinridge, of Louisville; Dr. Foree, of Jefferson; Dr. Leteher, of Jessamine; Dr. Spillman, of Mercer; Dr. Harrison, of Fayette; Dr. Roberts of Franklin; Dr. Gore of Nelson; Dr. Slaughter, of Shelby; Dr. Evans, of Kenton; Dr. Chew, of Woodford, and Dr. Black, of Scott; who after a short interval, reported the names of the following persons as suitable to fill the various offices:

For President—Dr. W. L. Sutton, of Georgetown.

For Senior Vice-President—Dr. W. S. Chipley, of Lexington.

For Junior Vice President—Dr. J. Dudley, of Nicholasville.

For Recording Secretary—Dr. W. C. Sneed, Frankfort.

For Corresponding Secretary—Dr. R. J. Breckinridge, Jr., of Louisville.

For Librarian—Dr. Ben Moore, of Frankfort.

The report was received, and the ballot being taken on each officer separately, the nomi-

nees of the committee were declared duly elected.

Drs. J. M. Mills, E. H. Watson, and W. C. Sneed, of Frankfort, were elected a committee of publication.

The Convention then adjourned *sine die*, and the first annual meeting of the State Medical Society of Kentucky was held, and proceeded to business.

W. L. SUTTON, President.

E. H. WATSON,

J. M. MILLS,

Secretaries.

PROCEEDINGS OF THE FIRST ANNUAL MEETING OF THE STATE MEDICAL SOCIETY OF KENTUCKY.

At the first annual meeting of the State Medical Society of Kentucky, held in the Senate Chamber at Frankfort, on the 1st day of October, 1851, at 5 o'clock, P. M., the President, Dr. W. L. Sutton, took the chair, and called the Society to order.

On motion of Dr. Ayres, a committee, consisting of Drs. Dudley, Yandell, Garrison, Roberts, and Wilson, was appointed to apply to the next meeting of the Legislature for a charter for the Society.

On motion of Dr. Chipley, the next annual meeting of the Society as ordered to be held in the city of Louisville, on the third Wednesday in October, 1852.

On motion of Dr. Richardson, it was

Resolved, That the Code of Medical Ethics of the American Medical Association be adopted as the Code of this Society.

Dr. Chipley presented a form of charter for the Society, which, after some discussion, was withdrawn.

On motion of Dr. Breckinridge, a committee, consisting of Drs. Rodman, Anderson, Thomson, Ayres, and Spillman, was appointed to draft a set of by-laws.

The application of Dr. J. C. Darby, of Lexington, was received for membership, and then the Society adjourned until half past 7 o'clock.

Half Past 7 O'Clock.

The Society was called to order by the President.

The application of Dr. Darby was taken up, and he was duly elected a member of the Society.

The president announced the appointment of the following gentlemen as Chairmen of the various standing committees, each Chairman having the liberty to select two others as associates:†

*Up to the time of the proceedings going to press, the Chairmen of several of the committees had not handed in the names of their associates.

*See Constitution, Page 112.

Chairman of Committee of Arrangements—Dr. Anderson; Drs. Breekinridge and W. H. Miller, Associates.

Chairman of Committee on Improvements in Praetical Medicine—Dr. Force; Drs. Rodman and Richardson, Associates.

Chairman of Committee on Improvements in Pharmacy—Dr. Mills; Drs. Gore and Ray, Associates.

Chairman of Committee on Vital Statistics—Dr. Chipley; Drs. Yandell and Dudley, Associates.

Chairman of Committee on Obstetrics—Dr. H. Miller; Drs. Sneed and Letcher, Associates.

Chairman of Committee on Medical Ethics—Dr. A. Evans.

Chairman of Committee on Public Hygiene—Dr. E. C. Drane.

Chairman of Committee on Epidemics—Dr. Darby.

Chairman of Committee on Improvement in Surgery—Dr. Gross.

Chairman of Committee on Indigenous Botany—Dr. Spillman.

Chairman of Committee on Finances—Dr. Thompson.

On motion of Dr. Breekinridge, the President was appointed Chairman of a committee to memorialize the Legislature upon the subject of registration of marriages, births, and deaths.

The Committee on By-Laws was granted until next regular meeting of the Society to report.

On motion of Dr. Breekinridge, the Society determined to go into the election of honorary members. The vote was reconsidered, and the subject for the present postponed.

The Society elected the following persons as delegates to the next annual meeting of the American Medical Association, viz: Drs. E. G. Ray, E. D. Force, T. G. Richardson, D. J. Ayers, D. S. Slaughter, E. C. Drane, W. H. Miller, W. R. Evans and Joshua Gore.

A series of resolutions were offered by the President, Dr. Sutton, which were laid over until the next regular meeting.

The Secretary and Treasurer were required to give bonds in the sum of two hundred dollars each, for the faithful performance of their respective duties.

On motion of Dr. Gross, the President was requested to deliver an opening address at the next annual meeting of the Society.

The Society recommended the formation of County Medical Societies.

The record of proceedings was read, and after slight amendments was adopted, and ordered to be published in connection with the Constitution and Code of Medical Ethics.

A vote of thanks was tendered the officers of the Society for the prompt and efficient

manner in which they discharged their respective duties, and

The Society adjourned.

W. L. SUTTON, President.

W. C. SNEED, Secretary.

NOTE—Owing to the limited time in which the notice for the call of the Convention was issued the attendance was comparatively small; but, as will be observed from the proceedings, the Society may now be regarded as constituted upon such a permanent basis as will tend to the elevation of the profession, and a more zealous and harmonious co-operation in accomplishing its legitimate objects.

All regular surgeons and physicians in the State are requested to unite with the Society, on the terms prescribed by the Constitution, and forward their applications, prepaid, to Dr. W. C. Sneed, Recording Secretary, Frankfort.

Several applications have already been received since the adjournment.

Particular attention is requested to the Code of Ethics.

CONSTITUTION OF THE KENTUCKY STATE MEDICAL SOCIETY ADOPTED AT FIRST MEETING, HELD AT FRANKFORT IN 1851.

ARTICLE I.

TITLE OF THE ASSOCIATION.

This association shall be known as the Kentucky State Medical Society, and shall be composed of permanent, temporary, and honorary members.

ARTICLE II.

OBJECTS OF THE ASSOCIATION.

The objects contemplated by the Kentucky State Medical Society are,

1. The establishment and maintenance of union, harmony, and good government among its members, thereby promoting the character, interest, honor, and usefulness of the profession.
1. The cultivation and advancement of Medical science and literature, by the collection, diffusion, interchange, preservation, and general circulation of medical knowledge throughout the State.

ARTICLE III.

MEMBERSHIP.

Section 1. The Kentucky State Medical Society shall be composed of all the Physicians and Surgeons now members of this Convention, and such other persons as may be admitted according to the provisions of the following sections of this article.

Sec. 2. Every candidate for PERMANENT MEMBERSHIP, must make application to the society in writing, bearing his own signature. Such application is to be presented and seconded by members having a competent knowledge of the character and standing of the applicant. The application shall lie over at least one adjournment of the society, after which the candidate shall be ballotted for, and the approving votes of three-fourths

of the members present shall be necessary to his admission.

Sec. 3. The TEMPORARY MEMBERS, shall be those who may be selected by any regularly organized City, Town, or County Medical Society, to represent said society in the state association. Their membership shall terminate with the session for which they may have been elected.

Sec. 4. HONORARY MEMBERSHIP, shall be conferred only on distinguished medical gentlemen residing beyond the limits of the Commonwealth of Kentucky.

Sec. 5. The election of Honorary Members can take place only at the annual meeting of the Society, and not more than three shall be elected in any one year.

Sec. 6. The election of Honorary Members shall be by ballot, and the concurring votes of four-fifths of the members present shall be necessary to their election.

Sec. 7. Honorary Members shall be exempt from all pecuniary contributions to the society, and shall have all the privileges of permanent and temporary members, except the right of voting and holding office.

Sec. 8. Every member shall be entitled to a certificate of his membership after he shall have complied with the requisition of Article 3, and on payment of one dollar to the Recording Secretary. The form of such certificate shall be prescribed by the by-laws.

ARTICLE IV.

FEEES.

All members of this society not exempted by the provisions of this Constitution, shall, at the time of their admission pay to the society a fee of two dollars, and shall also pay once a year, to fall due on the first day of each annual meeting, such contributions as the by-laws may, from time to time, prescribe.

ARTICLE V.

RESIGNATION OF MEMBERSHIP.

Any member wishing to withdraw from the society, may do so when he shall have presented the Secretary's receipt for all moneys due.

ARTICLE VI.

FORFEITURE OF MEMBERSHIP AND OTHER CENSURE.

Section 1. Any member who shall be guilty of gross misconduct either as a member or a citizen of the community, or shall be palpably derelict in duty either as a member or officer, shall be liable to expulsion, or such other censure as the society may direct.

Sec. 2. No judgment of expulsion, suspension, or other censure, shall be passed against a member until after due notice and fair trial; but the society may proceed in the absence of the delinquent if such due notice has been

given and the member fails to attend. No member shall be expelled unless by the votes of three-fourths of the members present. And should such member come forward at the next annual meeting succeeding his expulsion, and offer a satisfactory explanation, he may be reinstated without delay or expense, provided three-fourths of the members present agree thereto. In this case the vote shall be taken by ballot.

ARTICLE VII.

MEETINGS.

Section 1. This society shall hold its session for the present year, commencing on the first day of October, and shall hereafter convene annually on the third Wednesday of October, at such places as the society may, from time to time, direct.

Sec. 2. Special meetings may be held by resolution of the society at its stated meetings, and at such other times as the President shall appoint.

Sec. 3. None but professional or literary subjects shall be considered at special meetings.

ARTICLE VIII.

ELECTIVE OFFICERS.

Section 1. The elective officers of this society shall consist of a President, Senior and Junior Vice President, Recording and Corresponding Secretary, Treasurer, Librarian, and a Committee of Publication, of three members; all of whom shall be chosen by ballot at each annual meeting, and shall continue in office for twelve months, or until another election. The election shall be held on the second day of the session, after reading the records of proceedings of the preceding day.

Sec. 2. In conducting the annual election, should more than two members be balloted for for any officer, the member having the smallest number of votes on the second or any subsequent ballot, shall not again be voted for for the same office.

Sec. 3. A majority of the suffrage of the members present shall be necessary to an election.

ARTICLE IX.

DUTIES OF OFFICERS.

Section 1. It shall be the duty of the PRESIDENT to preside at all meetings of the society, to preserve order, and to regulate the debate according to the most approved rules of parliamentary proceedings, provided, any member may appeal to the society from the President's decision on points of order. The presiding officer shall appoint the chairman of all committees (except the committee of publication), unless otherwise ordered by the society—each chairman having the right to select two members to assist him in the discharge of the duties assigned the committee.

Sec. 2. In the absence of the President, the Vice Presidents, according to seniority, shall perform all duties appertaining to the chair; but if neither be present, the society shall elect a President *pro tem*.

Sec. 3. The RECORDING SECRETARY shall keep a correct list of all the members of the Society, arranging the names of those now present alphabetically, and hereafter according to their admission. He shall keep accurate minutes of all the proceedings of the society, including the names of members present, and, from time to time, transcribe them into the record book in a fair and legible hand. He shall keep regular accounts with each member of the society, receive all moneys due to it, and pay them to the Treasurer, taking his receipt for the same upon his record book. Such papers of the society as are not necessarily recorded he shall preserve in distinct and regular files, holding them always accessible to the inspection of members. Whenever any chairman of a committee is appointed, the Recording Secretary shall furnish him with a copy of the minute of appointment, together with any document that may be essentially connected with the duties of the Recording Secretary shall enter into a bond for the transfer to the Treasurer of all moneys that may come into his hands. The society shall fix the amount of the bond, which shall be made payable to the society, and deposited in the hands of the Librarian.

Sec. 4. The CORRESPONDING SECRETARY shall notify all members and officers of their election; he shall write and answer letters in behalf of the society, and in general manage their distant correspondence as particular exigencies or the resolutions of the society may require. He shall read to the society all communications and answers which he may have made or received during each recess, and then deliver them to the Recording Secretary or the Librarian, according to their several characters.

Sec. 5. The TREASURER shall receive all moneys from the Recording Secretary, agreeably to Section 3rd, of this Article, and shall pay the same to the order of the society, certified by the President and attested by the Recording Secretary. On the first day of each annual meeting, and oftener if required by the society, he shall render a detailed statement of the business of his department, and shall deliver up to his successor the books, papers, money, or other property of the society, remaining in his hands. For the faithful performance of his duties, the Treasurer, before entering thereon, shall execute and deposit in the hands of the Librarian a bond made payable to the society, in such amount as the society may direct.

Sec. 6. The LIBRARIAN shall have under his custody the bonds of the Secretary and

Treasurer, and it shall be his duty to take special charge of all the books, essays, and whatever may constitute any part of the scientific or literary stock of the society. No manuscript shall be moved from his possession without an order from the society, except by the members of the Committee of Publication.

Sec. 7. It shall be the duty of the COMMITTEE OF PUBLICATION, to select from the essays of the members, and other communications made to the society, such as they may think worthy of being published. Such selections as may be made by the committee, shall, when ordered by the society, be published with the minutes of the annual meeting, under the title of TRANSACTIONS OF THE KENTUCKY STATE MEDICAL SOCIETY. After the publication of each number or volume of the Transactions, the committee shall return to the Librarian all papers belonging to the society.

ARTICLE X.

STANDING COMMITTEES.

The following standing committees shall be appointed annually, viz: A Committee of Arrangements; on Medical Ethics; on Public Hygiene; on Vital Statistics; on Epidemics; on Obstetrics; on Improvements in Practical Medicine; on Improvements in Surgery; on Improvements in Pharmacy; on Indigenous Botany; on Finance; on Publication.

ARTICLE XI.

AMENDING THE CONSTITUTION.

Every proposition to amend this Constitution shall be made in writing, and shall be audibly read by the Recording Secretary on two different days; when, if there be no dissenting voice, it shall be declared adopted; but if there be one or more negatives, or if the amendment be offered on the last day of the session, it shall be placed on file to be read at the next annual meeting; when, if there be a concurrence of three-fourths of the members present, it shall be incorporated as a part of the Constitution.

PROCEEDINGS OF THE SECOND ANNUAL MEETING OF THE STATE MEDICAL SOCIETY OF KENTUCKY.*

The second annual meeting of this Society was held in Louisville, on the 20th day of October, 1852, the President, Dr. W. L. Sutton, in the chair.

The roll having been called, a number of candidates for membership were proposed.

After transacting some unimportant business, the Society took a recess until 3 o'clock.

*Reprint from the *Medical News and Library*, Philadelphia.

3:00 o'clock P. M.—The Society met pursuant to adjournment, the President in the chair.

Forty-five members were elected.

Dr. Breckinridge, on the mode of proceedings, reported.

On motion of Dr. L. P. Yandell, Drs. Clapp, Leonard, and Steele of New Albany, Ind., were invited to take part in the proceedings.

On motion of Dr. Raphael, a Committee was named to draft a set of by-laws for the Society, to report to-morrow.

Drs. Raphael, Dudley, and Drane were appointed.

Dr. Bell presented to the Society a form for a Case-Book, drawn up by the President, which he wished to refer to a committee to report upon.

Drs. Bell, Force and Chipley were appointed.

Upon motion of Dr. Bell, the order of proceedings was so far modified as to permit Dr. Chipley, Chairman of the Committee on Vital Statistics, to read his report.

On motion of Dr. Evans, it was received, and referred to the Committee on Publication.

On motion of Dr. Gross, the Society adjourned to 7 1-2 o'clock.

NIGHT SESSION.

The Society met according to adjournment. Several new members were elected.

Dr. Chipley nominated Dr. Elisha Bartlett of New York, Dr. Gross nominated Dr. Drake of Cincinnati, and Dr. Yandell nominated Dr. Deadrick of Tennessee, as honorary members of this Society, which nominations were concurred in.

Dr. Miller offered the following resolutions, which were ordered to be laid over until to-morrow:

Resolved, That the members of this Society will faithfully comply with the regulations of the registration law passed at the last session of the Kentucky Legislature, and do what they can to have it complied with throughout the State.

On motion of Dr. Bell, an invitation was extended to Dr. Charles Caldwell, to visit the Society during its sittings, and participate in its deliberations.

The President, Dr. Sutton, read his annual address, which was received and referred to the Committee on Publication.

The Society then adjourned until 10 o'clock to-morrow.

SECOND DAY'S PROCEEDINGS.

The Society met and was called to order by the President, the minutes of yesterday were read and adopted.

Dr. Gross moved the appointment of the following committees, to report at the next annual meeting of the Society, or as soon thereafter as practicable:

(1) On Medical Biography, or the lives of meritorious or distinguished Physicians and Surgeons of Kentucky.

(2) On Medical Literature, or the History of the Medical Authorship of Kentucky.

(3) On the Relations between Diseases and peculiar Geological Formations.

(4) On the Statistics of Hernia.

(5) On the Statistics of Lithotomy and Calculous Diseases.

(6) On the History and Mode of Management of Hospitals, Asylums, Infirmaries, Penitentiaries and Prisons.

(7) On Suits for Malpractice.

(8) On the Results of Surgical Operations in Malignant Diseases.

(9) On Epidemic Erysipelas.

(10) On Epidemic Dysentery.

(11) On Typhoid Fever.

(12) On Placenta Previa.

(13) On the Statistics of Remedies in Diseases.

On motion of Dr. Gross, Dr. Drake, of Cincinnati, was invited to take part in the deliberations of the Society.

Dr. Thompson, on behalf of the Physicians of Louisville, invited the Society to partake of a festal supper at the Louisville Hotel, on to-morrow night.

The Society, on motion, proceeded to ballot for officers. A number of gentlemen were put in nomination, and after several ballotings, Dr. Chipley, of Lexington, was elected President.

Dr. Peter moved that a Committee consisting of one member from each county represented, and one from the City of Louisville, be appointed to nominate the candidates to fill the remaining offices, which was adopted.

Dr. Gross moved that the reports of Standing Committees be made in the order in which they are reported in the proceedings of the first annual meeting.

The following committees failed to make their annual reports, viz:

The Committee on Arrangements, the Committee on Practical Medicine, the Committee on Improvements in Pharmacy, and the Committee on Public Hygiene.

Dr. Evans, Chairman of the Committee on Ethics, read his report, which was received and referred to the Committee on Publication.

The Society then adjourned to 3 o'clock P. M.

EVENING SESSION.

The Society met according to adjournment and was called to order by the President.

The Nominating Committee made the following report:

They nominate the following gentlemen to fill the offices attached to their names. For Senior Vice-President, Dr. E. C. Drane, of New Castle; for Junior-Vice-President, Dr.

A. Evans, of Covington; for Recording Secretary, Dr. Sneed, of Frankfort; for Corresponding Secretary, Dr. Breckinridge, of Louisville; for Librarian, Dr. B. Monroe, of Frankfort; on Publications, Drs. Bell, Ronald and Foree of Louisville; the report was received and Committee discharged.

The Society then proceeded to ballot for Senior-Vice-President. Dr. Drane having received a majority of all the votes cast, was declared duly elected; Dr. Knight, was elected Junior-Vice-President; Dr. Sneed, Recording Secretary; Dr. Breckinridge, Corresponding Secretary; B. Monroe, Librarian; and Drs. Bell, Foree and Ronald, the Publication Committee.

Dr. Miller, the Chairman of the Committee on Obstetrics, then read his annual report, which was received and referred to the Committee on Publication.

Dr. Sutton, Chairman of the Committee on Registration, read his annual report, which was received and referred to the Committee on Publication.

The Society then adjourned to half-past seven, P. M.

7¼ o'clock P. M.

The Society met according to adjournment, after being called to order by the President, proceeded to the election of members.

Dr. Wible offered the following preamble and resolution which was adopted:

Whereas, Physicians are frequently called on to give evidence in Courts of justice, to make post-mortem examinations, and institute investigations in cases of poisoning, services of a strictly professional character, requiring expense, time and labour on the part of the physician: and, whereas, these services are often of great importance to the welfare of society, and as physicians ought not to be expected to perform these without remuneration, it is the opinion of the Kentucky State Medical Society, that the interests of humanity demand that laws be enacted which will properly secure these services when required by coroners, and other officers of the law.

Therefore, it is resolved that a committee of three be appointed to prepare a report to be read at the next annual meeting of this Society, on the subject presented in the foregoing preamble.

Dr. Darby, Chairman of the Committee on Epidemics, read the annual report, which was received and properly referred.

This Society, by a vote, decided upon Lexington as the place for holding the next annual meeting. The Society then adjourned til to-morrow morning at 10 o'clock.

THIRD DAY'S PROCEEDINGS.

The Society met at 10 o'clock A. M., and was called to order by the President,

Dr. Gross's resolutions, offered yesterday, were brought up and adopted.

A set of by-laws was adopted.

Dr. Gross, Chairman on Improvements in Surgery, made his annual report, which was received and referred to the Committee on Publication.

Dr. Spillman, Chairman of the Committee on Improvements in Pharmacy, also reported which report was referred to the same Committee.

Dr. Spillman, in connection with the above report, offered the following resolutions, which were adopted:

Resolved, That this Society regard the cultivation of our own botany as essential to a full development of our professional resources, and to a more successful practice of our art.

Resolved, That the profession throughout the State, and the members of this Society particularly, be requested to give special attention to this subject, and, by cultivating the field of observation and research, in connection with the unexplored regions of vegetable nature within our own limits, ascertain to what extent the demand of the healing art can be supplied at home.

Resolved, That any physician discovering a new remedy, or a new property in one already known, or any information touching the medical botany of our State, that can be rendered practically available, be requested to communicate such information to the Chairman of the Committee on Indigenous Botany.

Resolved, That the Committee on Publication, at as early a date as practicable, by a brief circular or otherwise, communicate the objects embraced in these resolutions to the profession throughout the State, giving the name and location of the Chairman of the Committee on Indigenous Botany, and earnestly requesting contributions.

The President announced the following Standing Committees:

Committee on Arrangements, Dr. Darby, of Lexington.

Committee on Practical Medicine, Dr. Foree, of Louisville.

Committee on Pharmacy, Dr. Silliman, of Louisville.

Committee on Vital Statistics, Dr. Sutton, of Georgetown.

Committee on Obstetrics, Dr. Powell, of Louisville.

Committee on Medical Ethics, Dr. Hewett, of Louisville.

Committee on Public Hygiene, Dr. Bell, of Louisville.

Committee on Epidemics, Dr. Bullitt, of Louisville.

Committee on Surgery, Dr. Flint, of Louisville.

Committee on Indigenous Botany, Dr. Emmett, of Pike County.

Committee on Finance, Dr. Letcher, of Jessamine county, and also the following special committees:

1. On Medical Biography, or the lives of meritorious or distinguished physicians and surgeons of Kentucky, Dr. Breckinridge, of Louisville.

2. On Medical Literature, or the History of the Medical Authorship of Kentucky, Prof. L. P. Yandell, of Louisville.

3. On the relation between diseases and particular Geological Formations, Dr. Peter, of Lexington.

4. On the Statistics of Hernia, Dr. S. B. Richardson, of Louisville.

5. On the Statistics of Lithotomy and Calculous Diseases, Dr. Gross, of Louisville.

6. On the History and Mode of Management of Hospitals, Dr. Raphael, of Louisville; of Penitentiaries and Prisons, Dr. W. C. Sneed, of Frankfort.

7. On Suits for Mal-Practice, Dr. Spillman, of Harrodsburg.

8. On the Results of Surgical Operations in Malignant Diseases, Dr. Colescott, of Louisville.

9. On Epidemic Erysipelas, Dr. Owens, of Henry County.

10. On Epidemic Dysentery, Dr. Fry, of Louisville.

12. On Placenta Previa, Dr. Miller, of Louisville.

13. On the Statistics of Remedies in Disease, Dr. Lewis Rogers, of Louisville.

Dr. Sutton offered the following resolution, which was adopted, and the same, with Dr. Wibel's resolution of yesterday, were referred to a special committee, Dr. Wibel, Chairman, with the privilege of adding such other members as he may wish:

Resolved, That a committee be appointed to consider whether any, and if any, what measures can be brought into requisition to lessen the heavy burden of pauper practice, and report at the next annual meeting of this Society.

Dr. Thompson, Chairman of Committee on Finance, presented a report.

Dr. Bell, Chairman of Committee on Case Book, made a report, which was received and referred to the Committee on Publication.

The Society elected the following gentlemen as delegates to the National Medical Society.

Dr. W. S. Chipley, of Lexington; Dr. Freeman, of Oldham County; Dr. W. C. Sneed, of Frankfort; Dr. B. J. Raphael, of Louisville; Dr. T. J. Moore, of Harrodsburg; Dr. Wibel, of Louisville; Dr. John Hardin, of Louisville, and Dr. Hewett, of Louisville.

The Society then went into the election of Honorary Members, when the following gentlemen were unanimously elected: Dr. D.

Drake, of Cincinnati; Dr. Deadrick, of Tennessee, and Dr. Elisha Bartlett, of New York.

On motion of Dr. Jacobs, the following resolution was unanimously adopted:

Resolved, That the thanks of this Society be tendered the officers for the faithful, able and impartial manner in which they have discharged their respective duties.

And then the Society adjourned.

W. S. CHIPLEY, President.

W. C. SNEED, Rec. Secretary.

The above is a true copy of an article published in the number of "The Medical News and Library," January, 1853. S. G. FULTON.

ROSTER OF THE MEMBERS OF THE KENTUCKY STATE MEDICAL SOCIETY IN 1856.*

Anderson, N. B. Louisville.
Abell, S. R., Hardinsburg.
Allen, A. S., Winchester.
Ayres, D. J., Lexington.
Allen, John R., Lexington.
Annan, S., Lexington.
Black, E. H., Scott County.
Breckinridge, R. J., Louisville.
Bruce, C. D., Lexington.
Bell, T. S., Louisville.
Bullitt, H. M., Louisville.
Bartlett, John, Louisville.
Brown, E. O., Brandenburg.
Bright, J. W., Louisville.
Broadwell, S. E., Cynthiana.
Bradford, J. T., Augusta.
Bush, J. M., Lexington.
Benniss, Samuel M., Louisville.
Bryson, C. D., Kenton County.
Blackburn, C. J., Covington.
Barbour, J. H., Pendleton County.
Craig, Henry, Georgetown.
Chipley, W. S., Lexington.
Chambers, W. M., Covington.
Caldwell, W. B., Louisville.
Chenoworth, H., Louisville.
Cromwell, W. B., Lexington.
Conway, G. W., Yelvington.
Cummins, David, Louisville.
Colescott, W. H., Louisville.
Cochran, P. H., Louisville.
Chinn, J. G., Lexington.
Craig, J., Stanford.
Curran, — —, Kenton County.
Dudley, J., Nicholasville.
Darby, John C., Lexington.
Durrutt, R., Louisville.
Drane, J. S., New Castle.
Dunhoff, John, Louisville.
Dudley, E. L., Lexington.
Darnaby, B. M., Fayette County.
Duke, J. M., Maysville.
Drake, B. P., Lexington.

*No one of these men living.

- Dulaney, J. J., Covington.
 Downard, L., Kenton County.
 Evans, Ashbury, Covington.
 Evans, W. R., Mercer County.
 Ewing, U. E., Louisville.
 Emmert, J. W., Pikeville.
 Flint, Joshua B., Louisville.
 Foree, E. D., Jefferson County.
 Freeman, D. L., Ballardsville.
 Fry, C. H., United States Army.
 Forsyth, H., Louisville.
 Foster, J. O. A., Newport.
 Foss, S. A., Jefferson County.
 Gross, Samuel D., Louisville.
 Gore, Joshua, Bullitt County.
 Grant, E. L., Pendleton County.
 Gazley, L. E., Henry County.
 Givens, H. L., Oldham County.
 Harrison, George B., Fayette County.
 Hodges, L. Y., Franklin County.
 Hewitt, P. C., Louisville.
 Hopson, H., Jefferson County.
 Hunter, S. V., Hawesville.
 Hundley, W. A., Louisville.
 Hardin, John, Louisville.
 Hall, S. N., Louisville.
 Hynes, B., Bardstown.
 Hawkins, J. H., Harrison County.
 Hunt, R. H., Covington.
 Holt, W. D., Covington.
 Hughes, J. N., Louisville.
 Ingles, Edward, Paris.
 Jacobs, W. R., Louisville.
 Jones, R. M., Lexington.
 Johnis, A. H., Kenton.
 Jenkins, H. D., Lexington.
 Knapp, Jas., Louisville.
 Knight, J. W., Louisville.
 Kirkpatrick, John, Cynthiana.
 Keller, David, Jefferson County.
 Letcher, J. P., Nicholasville.
 Lyle, C. L., Louisville.
 Lewis, — —, Jefferson County.
 Lee, E. Y., Covington.
 Long, E. T., Henry County.
 Letcher, Samuel, Lexington.
 Miller, Henry, Louisville.
 Miller, W. H., Louisville.
 Mills, J. M., Frankfort.
 Monroe, Ben., Frankfort.
 Moore, T. J., Harrodsburg.
 Metcalfe, J. C., Louisville.
 Meriwether, H. C., Louisville.
 Miller, John T.
 Morris, W. P., Daviess County.
 Mattingly, C. P., Bardstown.
 Martin, H. D., Paris.
 Major, Fr., Covington.
 McCreary, J. C., Simpson County.
 Montgomery, W. C., Lincoln County.
 McCauley, W. D., Louisville.
 Owen, W. T., Louisville.
 Owen, L. F., New Castle.
 Owen, S. R., Somerset.
 O'Riley, Dennis, Louisville.
 Phythian, C. G., Frankfort.
 Powell, L., Louisville.
 Pyles, N., Louisville.
 Pirtle, C., Louisville.
 Peter, Robert, Lexington.
 Price, J. G., Franklin County.
 Patterson, A. A., Fayette County.
 Pilkinton, S. C., Lexington.
 Pritlow, R., Covington.
 Perrine, H., Lexington.
 Polin, Francis E., Springfield.
 Powell, W. J., Mercer County.
 Richardson, T. G., Louisville.
 Rogers, Lewis, Louisville.
 Ronald, G. W., Louisville.
 Ross, John O., Louisville.
 Rudd, R. H., Louisville.
 Richardson, S. B., Louisville.
 Rodman, H., Frankfort.
 Roberts, J. G., Frankfort.
 Ray, L. G., Paris.
 Raphael, B. J., Louisville.
 Riffe, J. M., Winchester.
 Rankin, Paul, Georgetown.
 Ray, J. D., Paris.
 Richardson, Edw'd., Kenton County.
 Reddick, P. L., Newport.
 Ridley, J. O., Louisville.
 Sutton, W. L., Georgetown.
 Sneed, W. C., Frankfort.
 Swain, John, Ballardsville.
 Spillman, C. H., Harrodsburg.
 Slaughter, D. L., Shelbyville.
 Sale, T. J., Louisville.
 Speed, John J., Louisville.
 Silliman, B., Jr., Louisville.
 Smith, Joseph, Danville.
 Smith, C., Richmond.
 Smith, W. O., Coleansville.
 Saunders, Th., Shelbyville.
 Singleton, — —, Jessamine County.
 Sloan, W. J., Newport.
 Singleton, J. W., Paducah.
 Shaler, N. B., Newport.
 Sentenay, W. W., Jefferson County.
 Southgate, B. W., Kenton County.
 Smith, W. C., Harrison County.
 Schue, A., Shelbyville.
 Smith, J. L., Louisville.
 Smith, J. F., Covington.
 Scott, S. S., Kenton County.
 Tyler, G. B., Owensboro.
 Thornbury, P., Louisville.
 Thum, Mandeville.
 Thum, G. W., Louisville.
 Tinsley, J. J., Louisville.
 Thomson, D. D., Louisville.
 Trabue, B. F., Glasgow.
 Tingle, J.
 Thornton, G. W., Newport.
 Tibbetts, W., Covington.

Winston, J. D., Georgetown.
 Watson, E. H., Frankfort.
 Whitley, J. J., Lexington.
 White, E. P., Mount Sterling.
 Wible, B. M., Louisville.
 Wetherford, E. D., Louisville.
 Way, J. C., Louisville.
 Wise, T. J., Covington.
 Wise, T. N., Covington.
 Walton, C. J., Hart County.
 Yandell, L. P. Sr., Louisville.
 Yandell, D. W., Lewisville.

No one of these men living.

A SELF-EXPLANATORY COMMUNICATION FROM THE PRESIDENT OF THE STATE SOCIETY*.

Frankfort, Ky., December, 1856.

To the Members of the Kentucky State Medical Society:

While acting in the capacity of Secretary for three years, and since my promotion to the office of President of your society, I have received numerous communications from members and from physicians not members, who feel some interest in the permanent success of the enterprise, making inquiries as to when the transactions of the several meetings, not published, would be given to the public. To all these inquiries, I have been compelled to give an indefinite and unsatisfactory answer. It is well known to most of you, that valuable and interesting reports were made at the annual sessions held in 1853-54, which have not been published for want of funds to pay the expense of printing them. This has resulted mainly from a want of promptness on the part of the members in sending up their annual assessments, which, had they been forwarded, would have been amply sufficient to enable the committee on publications, to have had the transactions promptly printed and distributed. The last annual meeting was held during the inclement weather of February, and the number present, though respectable, was not as large as at the former meetings. No definite arrangements were made for publishing the transactions of that meeting, and the reports were left in my hands to be disposed of in such way as might seem best. I have, with the advice of some of the members, ventured to have the transactions of that meeting published, mainly upon my own responsibility. There being a balance in the Treasury belonging to the Society, I have appropriated it in part payment for printing these transactions.

The transactions herein published, are creditable to the Society, and too valuable to be lost. Those of former meetings to the promotion of so laudable a cause. By reference to the list of members appended, it will be seen that an annual contribution of \$3 each, would be amply sufficient to publish the transactions of each annual meeting, and would furnish each member with a volume, worth more than his assessment. The transactions not published are,

For the Session of 1853:

Annual address by the President, Dr. Chipley.

Report on Surgery—Prof J. B. Flint.

Medical Biography—Dr. L. P. Yandell.

Statistics of Hernia—Dr. S. B. Richardson.

Epidemic Erysipelas—Dr. L. F. Owens.

On the relation between Diseases and Particular Geological Formations—Dr. Peter.

Vital Statistics—Dr. W. L. Sutton.

History of Prisons and Penitentiaries—Dr. W. C. Sneed.

On Public Hygiene—Dr. T. S. Bell.

Medical Ethics—Dr. W. S. Chipley.

On Medical Grievances in Courts of Justice—Dr. B. M. Wible.

Those of the Session of 1854, are:

The Address of the President—Dr. Gross.

On Suits for Malpractice—Dr. C. H. Spillman.

On the Use of Cold Water as a Therapeutic Agent—Dr. J. C. Darby.

On the Treatment of Typhoid Fever—Dr. Joseph Smith.

These reports would make a large and valuable volume, filled with matter not to be had in any other way. To publish them, will require only a small sum from each member of the Society, and if each one will respond promptly, these valuable reports may be in their hands long before the next annual meeting.

Hoping that what I have done will meet with your cordial approbation, and that you will respond promptly to my suggestions, and aid me to have all the transactions of the Society published at an early day.

I remain yours, &c.,

W. C. SNEED,

President Kentucky State Medical Society.

* Circular.

NAMES AND RESIDENCES OF THE PRESIDENTS AND SECRETARIES, WITH
THE PLACES AND DATES OF MEETINGS OF THE STATE MEDICAL
SOCIETY OF KENTUCKY, FROM 1851 TO 1917¹.

YEAR	NAME	ADDRESS	PLACE OF MEETING
1851	President—William L. Sutton* Secretary—W. C. Sneed,*	Georgetown Frankfort	Frankfort
1852	President—William L. Sutton,* Secretary—W. C. Sneed,*	Georgetown Frankfort	Louisville
1853	President—William S. Chipley,* Secretary—W. C. Sneed,*	Lexington Frankfort	Lexington
1854	President—Samuel D. Gross,* Secretary—W. C. Sneed,*	Louisville Frankfort	Covington
1856	President—C. H. Spillman ² ,* Secretary—W. C. Sneed,*	Harrodsburg Frankfort	Frankfort
1857	President—W. C. Sneed,* Secretary—Tobias G. Richardson,*	Frankfort Louisville	Louisville
1858	President—W. T. Owen,* Secretary—Tobias G. Richardson,*	Louisville Louisville.	Louisville
1859	President—Joshua B. Flint,* Secretary—Samuel M. Bemiss,*	Louisville Louisville.	Lebanon
1868	President—D. N. Porter,* Secretary—Preston B. Scott,*	Eminence Louisville.	Danville
1869	President—William Pawling,* Secretary—Stanhope P. Breckinridge,*	Danville, Danville	Lexington
1870	President—Henry M. Skillman ³ ,* Secretary—M. E. Poynter,*	Lexington Midway	Bowling Green
1871	President—William A. Atchison,* Secretary—John D. Jackson,*	Bowling Green Danville	Covington
1872	President—T. N. Wise,* Secretary—William B. Rodman,* C. F. Ulrich ⁴ ,*	Covington Frankfort Louisville	Louisville
1873	President—Lewis Rogers,* Secretary—J. A. Larabee,*	Louisville Louisville	Paducah
1874	President—J. W. Thompson,* Secretary—J. A. Larabee,*	Paducah Louisville	Shelbyville
1875	President—Jerman Baker,* Secretary—J. A. Larabee,*	Shelbyville Louisville	Henderson
1876	President—J. A. Hodge,* Secretary—J. W. Singleton,*	Henderson Paducah	Hopkinsville
1877	President—R. W. Gaines,* Secretary—James H. Letcher,	Hopkinsville Henderson	Louisville

*Dead.

1. This title was changed to "The Kentucky State Medical Association" in 1903.

2. The minutes of the meeting in 1855 were not published or preserved, and, while the tradition is that regular meetings were held from 1859 to 1867, except for two or three years during the Civil War, a diligent search of over a year has failed to find a trace of the minutes or about the officers or places and dates of meeting.

3. On account of serious illness, Dr. Skillman could not attend the meeting and the Senior Vice-President, Dr. Atchison, presided and was elected President for the succeeding term.

4. Dr. Rodman did not attend the meeting and Dr. Ulrich was elected Secretary pro tempore and served for the entire meeting.

YEAR	NAME	ADDRESS	PLACE OF MEETING
1878	President—Lunsford P. Yandell, Sr.,* John L. Dismukes*,* Secretary—James H. Letcher,	Louisville Mayfield Henderson	Frankfort
1879	President—Charles H. Todd,* Secretary—James H. Letcher,	Owensboro Henderson	Danville
1880	President—R. W. Dunlap,* Secretary—Arch Dixon,	Danville Henderson	Lexington
1881	President—Lyman Beecher Todd,* Secretary—Lewis S. McMurtry,	Lexington Danville	Covington
1882	President—James W. Holland, Secretary—Lewis S. McMurtry,	Louisville Danville	Louisville
1882	President—Anel D. Price,* Secretary—Lewis S. McMurtry,	Harrodsburg Danville	Louisville
1884	President—J. N. McCormack, Secretary—Samuel M. Letcher,*	Bowling Green Richmond	Bowling Green
1884	President—Pinckney Thompson,* Secretary—Samuel M. Letcher,*	Henderson Richmond	Crab Orchard
1886	President—Joseph P. Thomas,* Secretary—Steele Bailey,	Pembroke Stanford	Winchester
1887	President—William H. Wathen,* Secretary—Steele Bailey,	Louisville Stanford	Paducah
1888	President—John G. Brooks,* Secretary—Steele Bailey,	Paducah Stanford	Crab Orchard
1889	President—Lewis S. McMurtry, Secretary—Steele Bailey,	Louisville Stanford	Richmond
1890	President—John A. Ouchterlony,* Secretary—Steele Bailey,	Louisville Stanford	Henderson
1891	President—George Beeler,* Secretary—Steele Bailey,	Clinton Stanford	Lexington
1892	President—Hawkins Brown,* Secretary—Steele Bailey,	Houstonville Stanford	Louisville
1893	President—Arch Dixon, Secretary—Steele Bailey,	Henderson Stanford	Frankfort
1894	President—J. Q. A. Stewart,* Secretary—Steele Bailey,	Frankfort Stanford	Shelbyville
1895	President—Joseph B. Marvin,* Secretary—Steele Bailey,	Louisville Stanford	Harrodsburg
1896	President—John A. Lewis, Secretary—Steele Bailey,	Georgetown Stanford	Lebanon
1897	President—Robert C. McChord, Secretary—Steele Bailey,	Lebanon Stanford	Owensboro
1898	President—Joseph M. Mathews, Secretary—Steele Bailey,	Louisville Stanford	Maysville
1899	President—David Barrow, Secretary—Steele Bailey,	Lexington Stanford	Louisville
1900	President—William Bailey,* Secretary—Steele Bailey,	Louisville Stanford	Georgetown

*Dead.

5. On account of the death of Dr. Yandell, the Senior Vice-President, Dr. Dismukes, succeeded to the Presidency.

YEAR	NAME	ADDRESS	PLACE OF MEETING
1901	President—James H. Letcher, Secretary—Steele Bailey,	Henderson Stanford	Louisville
1902	President—T. B. Greenley,* Secretary—Steele Bailey,	Meadow Lawn Stanford	Paducah
1903	President—William W. Richmond, Secretary—Steele Bailey,	Clinton Stanford	Louisville
1904	President—Steele Bailey, Secretary—James B. Bullitt,	Stanford Louisville	Lexington
1905	President—Frank H. Clarke, Secretary—James B. Bullitt,	Lexington Louisville	Louisville
1906	President—Charles Z. Aud, Secretary—James B. Bullitt,	Cecilian Louisville	Owensboro
1907	President—Daniel M. Griffith, Secretary—Arthur T. McCormack,	Owensboro Bowling Green	Louisville
1908	President—John G. Cecil,* Secretary—Arthur T. McCormack,	Louisville Bowling Green	Winchester
1909	President—Isaac A. Shirley, Secretary—Arthur T. McCormack,	Winchester Bowling Green	Louisville
1910	President—Joseph E. Wells, Secretary—Arthur T. McCormack,	Cynthiana Bowling Green	Lexington
1911	President—James G. Carpenter, Secretary—Arthur T. McCormack,	Stanford Bowling Green	Paducah
1912	President—David O. Hancock,* Secretary—Arthur T. McCormack	Henderson Bowling Green	Louisville
1913	President—William O. Roberts, Secretary—Arthur T. McCormack,	Louisville Bowling Green	Bowling Green
1914	President—James W. Ellis, ¹ John J. Moren, Secretary—Arthur T. McCormack,	Masonville Louisville Bowling Green	Newport
1915	President—James W. Kineaid, Secretary—Arthur T. McCormack,	Catlettsburg Bowling Green	Louisville
1916	President—Ap. Morgan Vance, ^{2*} Milton Board, Secretary—Arthur T. McCormack.	Louisville Louisville Bowling Green	Hopkinsville
1917	President—Phillip H. Stewart, Secretary—Arthur T. McCormack,	Paducah Bowling Green	Louisville

* Dead.

1. Dr. Ellis was unable to attend the meeting; and, upon recommendation of the Council, Dr. Moren was unanimously elected President.

2. Dr. Vance died December 9, 1915, and upon recommendation of the Council Dr. Board was unanimously elected President.

FACTS AND REMINISCENCES OF THE
MEDICAL HISTORY OF KEN-
TUCKY.*

By LEWIS ROGERS, M. D., Louisville.

Gentlemen of the Society:

I esteem it a very great honor to be the presiding officer of the Kentucky State Medical Society, an association composed of members, past and present, many of whose names are among the most distinguished of this country. I deem myself specially fortunate in being

varied observations and study to the common stock. I am sure that I shall not be mistaken in the expectation that this meeting in Paducah will add greatly to the future usefulness of the Society by enlisting new and zealous workers who have not heretofore been associated with us.

As the time for our annual reunion approached, my mind became somewhat sollicitious as to the subject of this address. What shall I or what can I write about that had not been presented to you in a more attractive form than I felt that it was possible for me



DOCTOR LEWIS ROGERS

1812--1875

For many years one of the leading teachers and practitioners of Louisville,
and President of the State Society.

permitted to enjoy this honor in the prosperous and hospitable metropolis of Western Kentucky. I am pleased with the centrifugal movement which this meeting inaugurates. Heretofore we have met in the more central parts of the state; hereafter we may indulge the hope that the members from the remote parts will more fully participate in our proceedings, and contribute the result of their

to present it was naturally a question of much anxiety to me. The subject of medical education was "a three-fold tale." In all of its many important phases as connected with medical schools and office instruction, it had been discussed over and over again much more ably than I could discuss it. This would not do. And so in regard to the amount and the kind of education which should be required as preliminary to the study of medicine. This had formed the vexed topic of many an

*President's Address delivered before the State Medical Society, at Paducah, April, 1873.

interesting debate before this body and elsewhere. Sanitary science, in all of its wide range, had often been pressed upon your attention and disposed of as it should be. I could add nothing to it. And so again with the Anatomy Bill, with the law for the government of apothecaries, and many other matters of equal and even greater moment. They all have reference to the present or future interests of the public and the profession, and I have felt so sure that they would continue to command the public and professional mind until their beneficent purposes were accomplished that I could but deem it unprofitable to raise my voice in their behalf.

The history of medicine in Kentucky, the remarkable record which the profession has made since the very infancy of the state, are topics which may be recalled with just pride and very great pleasure. I propose to speak of some of these by-gone things as "Facts and Reminiscences of the Medical History of Kentucky." Many of the facts are already familiar to you in a fragmentary form; it may not be unprofitable or uninteresting to view them in a group. My own reminiscences may be received for what they are worth.

Whatever may be the present status of Kentucky medicine, and I hold that it is high, the past at least is secure. When Kentucky was to a large extent a wilderness, and not yet wholly free from hostile incursions of the Indians, when the population was so sparse as scarcely to give encouragement to any educational enterprises except such as were necessary for the simplest branches of learning, the interests of medicine were not only not neglected but received conspicuous regard.

In 1798 "Transylvania University" and the "Kentucky Academy" were united under one board of trustees, with the name of "Transylvania University," and in 1799 law and medical departments were added to the academical. Dr. Samuel Brown was appointed the first professor of medicine in Transylvania, and the first in the West. Dr. Francis Ridgeley was appointed a professor in the University shortly after Dr. Brown, and was the first to deliver a course of medical lectures in the West. From 1799 to 1817 various appointments were made in the medical department, and partial courses of lectures were delivered. During this interval, among the locally-distinguished men who were appointed to professorships, none were more remarkable than Dr. Joseph Buchanan. He died in Louisville in 1829; and I call up from the memories of my boyhood, with great distinctness, his slender, flexible form, massive head, and thoughtful, intellectual face. He was a man of great and varied powers of mind. He was a mechanical, medical, and political philosopher. His "spiral" steam boiler, the prototype of the exploding and exploded tubular

boiler, and his steam land-carriage, were among the wonders of the day. As a physician, his papers attracted distinguished notice from the medical savants of Philadelphia, then the great center of medical science. As a political writer, he was deemed worthy to discuss, and did discuss with power and effect, the momentous problems of special and general political economy agitating the country at the stirring period when Clay, Webster, John Quincy Adams, John C. Calhoun, and Andrew Jackson were the ruling spirits. Dr. Buchanan was the editor of the *Louisville Focus*, a post for which he was selected by the discerning mind of William W. Worsley, the founder of the *Louisville Focus* and of the great publishing house of John P. Morton & Co. If Dr. Buchanan had concentrated his wonderful mind upon some one of the great branches of medicine, he would have added much to the luster of Kentucky medicine. "His full nature, like that river of which Alexander broke the strength, spent itself in channels which had no great name on the earth."

In 1817 a full course was given in Transylvania to a class of twenty pupils, and in the spring of 1818 the degree of M. D., was conferred for first time in the West. John Lawson McCullough, of Lexington, was the first graduate in medicine in the valley of the Mississippi. History thus assigns to Kentucky the honor of inaugurating the teaching of scientific medicine in the West. The first to begin, she has occupied the most prominent position in this field of education to the present time. Her schools have been the most popular, her classes the largest, her professors the most learned, her graduates the leading practitioners of the South and West, and her influence upon practical medicine and surgery greater than that of all other schools.

Ranke's History of Lexington states "that vaccination had been introduced for several years in Lexington by Dr. Samuel Brown, of Transylvania, when the first attempts at it were being made in New York and Philadelphia. Up to 1802 he had vaccinated upward of five hundred persons in Kentucky." This invaluable discovery was announced by Jenner in 1798, and we find it successfully introduced into the backwoods of the West, by Kentucky enterprise, before 1802. The Kine-pock Institution of New York was established in 1802.

The Eastern Lunatic Asylum has long enjoyed a distinguished place among institutions of the kind in this country. Dr. W. S. Chipley, for so many years the eminent superintendent of this asylum, has made it known at home and abroad by his valuable reports and other papers upon mental alienation. This asylum was founded in 1816, under the name of the "Fayette Asylum." It

was the first ever established in the western country, and the second state asylum opened in the United States.

In connection with the history of medicine pertaining to Lexington, Dr. B. W. Dudley must ever occupy a conspicuous place. Distinguished in every branch of surgery, he was particularly eminent, as we all know, as a lithotomist. If not the first surgeon to perform this operation in Kentucky and the West, he was the first lithotomist in the number and successful results of his cases of the period in which he lived. His fame was co-existent with surgical literature.

If Kentucky had conferred no other benefaction upon mankind, the operation of ovariectomy performed for the first time by Dr. Ephraim McDowell, of Danville, in 1809, would entitle her to immortal honor. I believe that no one now denies to Dr. McDowell the originality of this heroic surgical achievement. Every surgeon in this country concedes it. In a conversation which I had, in 1865, with a number of eminent surgeons of Great Britain, among whom may be mentioned Mr. Spencer Wells, Mr. Baker Brown, and Sir James Syme, no one had any reserve on the subject except Mr. Syme. While he did not deny the claim of Dr. McDowell, he did not admit it. It is not a little amusing sometimes to note with what reluctance European writers recognize the great works of American surgeons and physicians. In a recent article in the *Edinburgh Review* upon the progress of medicine and surgery, the operation of ovariectomy is fully discussed without the mention of Dr. McDowell. Mr. Spencer Wells is made the hero of the operation!

The value of this operation can be better estimated by the statistics of eminent specialists. It is to be viewed as a remedy for a disease of utter hopelessness, if permitted to pursue an undisturbed career. Medicines have no influence over it. Though a few may live many dreary years, the average duration of ovarian tumors is from two to three years. Dr. McDowell operated thirteen times, as far as can be ascertained. He preserved the lives of six out of seven of his first patients. How many of the other cases were successful is not known, though it is certain that several were saved. Up to June last Mr. Wells's ovariectomies numbered 500, with 128 deaths. From March, 1870, to April, 1871, he had a succession of 32 cases in private practice without one death. Dr. Keith, of Edinburgh, up to July last had operated 146 times with only 26 deaths. Dr. W. L. Atlee, of Philadelphia, has operated about 300 times. Mr. Clay, of Manchester, up to December, 1871, had operated 250 times, with 182 successes. The results

may be tabulated, so as to be seen more clearly:

Spencer Wells	73.25%
Clay	72.80%
W. L. Atlee	71.00%
Bradford	90.00%
Kimball	66.11%
Dunlap	80.00%
Peaslee	67.85%
Thomas,	66.66%

Keith has attained the highest success yet achieved in Europe, having saved 81 of his first 100 cases, and 30 of his next 36 cases. In the United States the general average is 63 per cent., in Great Britain 60, in France 50, in Germany 41.66. Spencer Wells thinks the average yet will be 90 per cent. of cases in private practice, without excluding those extreme cases in which the operation is performed as a forlorn hope.

My purpose in presenting these details is to call attention to the fact that Dr. Taylor Bradford, of Augusta, Kentucky, has already attained the 90 per cent. success which Wells thinks may be ultimately attained. In Kentucky, where the operation was first performed the highest success has been reached.

Peaslee presents the great benefits conferred by ovariectomy in the following words: "It may be shown that in the United States and Great Britain alone ovariectomy has within the last thirty years directly contributed more than thirty thousand years of active life to woman, all of which would have been lost had ovariectomy never been performed."

The Institute for Deaf-mutes, in Danville, Kentucky, was founded in 1823. It was the first institution of the kind established in the West. It followed closely upon those of Hartford, New York, and Philadelphia. From a small beginning it has become a noble and most beneficent school. Mr. Jacobs, so long its superintendent, has made it known throughout the civilized world. The results attained in the education of deaf-mutes are astonishing. They no longer speak by a manual alphabet or manual signs only, but are trained to utter their thoughts in articulate sounds wonderfully perfect.

Dr. McDowell and Mr. Jacobs have given the name of Danville an illustrious perpetuity and bequeathed to their successors in that beautiful town a reputation which their pride should be emulous to sustain. It is not an undeserved eulogium to say that Dr. John D. Jackson and his associates of the Boyle County Medical Society uphold very ably the prestige already acquired.

Dr. Alban Goldsmith was an assistant to Dr. McDowell in several of his ovariectomies, and operated himself one or more times. He visited Europe at the time that Civiale was attracting great attention to his original op-

eration of lithotripsy. Dr. Goldsmith, under the teachings of this master, perfected himself in this specialty; and returning to his home in Kentucky operated on a gentleman in Lincoln County in 1829, the first operation of lithotripsy ever performed in Kentucky or in the United States. Dr. Goldsmith, desiring a wider field for his labors, removed to Louisville in a short while. In that city I had the pleasure of seeing him operate in this special way and in other branches of surgery. While residing in Louisville he conceived the project of another medical school, recognizing the importance of a large hospital and its clinical facilities in the teaching of medicine and surgery. To carry out this admirable design he procured from the legislature, in 1833, the charter of the "Medical Institute" of Louisville. A faculty was organized, but did not lecture. When a portion of the faculty of the Medical Department of Transylvania University seceded from that school, in 1837, they organized under the charter of the Institute, and continued to act under it until the University of Louisville was chartered, in 1845. Dr. Goldsmith may thus be considered the legal founder of a school so long sheltered by his charter.

From Louisville Dr. Goldsmith removed to Cincinnati, and for a time was professor of surgery in one of the schools of that city; but finally settled permanently in the city of New York, pursuing to the close of his life the special branch of surgery in which he was so skilled. His son Professor Middleton Goldsmith, is well known to the profession of this state as an able teacher and practitioner of surgery.

Dr. Gross, in his report on Kentucky Surgery, made to this Society in 1852, remarks: "In the treatment of hernia Kentucky may justly claim the credit of having effected one most valuable improvement. The truss invented by Mr. Stagner, and afterward modified by Dr. Hood, has acquired a world-wide celebrity. The value of the invention of Stagner and Hood can be fully appreciated by those only who are familiar with the nature and treatment of hernia, and with the state of our knowledge thereof prior to their time."

In the same report Dr. Gross records "that some years ago Dr. Bowman of Harrodsburg, showed me an instrument for injecting the parts immediately around the abdominal canal and apertures with a weak solution of iodine and other articles. It was constructed upon the principles of an ordinary syringe, with an extremely delicate nozzle, intended to be introduced through a small opening in the skin. We here find the hypodermic syringe foreshadowed, if not actually invented. When Wood published his first papers on the subject of hypodermic medication, I carried out the practice, with the syringe having a deli-

cately-curved nozzle used by dentists, in the treatment of an obstinate case of lumbago. Dr. S. Brandies, of Louisville, imported the first hypodermic syringe ever used in Kentucky, as he also did, through me, in 1862, the first laryngoscope.

The Louisville Marine Hospital was founded in 1817, and was among the first of the great public charities in the valley for sick and disabled marines. It was sustained partly by taxes upon sales at auction, and partly by a fund created, under the law of the United States, from weekly or monthly sums paid by all sailors navigating the Ohio and other western rivers. This institution was admirably managed. Its trustees were selected from the best citizens of Louisville, and its physicians and surgeons were the elite of the profession, mature men engaged in a large and busy private practice. Among them I recall the names of Drs. Richard Ferguson, George W. Smith, Coleman Rogers, Sr., Joseph Middleton, John P. Harrison, R. P. Gist, and Llewellyn Powell. Conspicuous in this medical staff, for personal virtues, for the qualities of the Christian gentleman and for all of the attributes of the accomplished physician, it gives me pleasure to single out for special notice Dr. Harrison.

My earliest recollections of medicine are associated with this remarkable man. I knew him well, and his history has always been a favorite theme with me. In this hospital he labored very faithfully, and laid the foundation of a medical career of great usefulness and distinction. Kentucky never produced a more worthy son. He was an assiduous worker at the bedside and in the dissecting room. He spent many of the long winter nights in the study of all forms of anatomy by minute and careful dissection. Not content with the modicum of anatomical knowledge acquired while attending his several courses of lectures, it was his custom to revise this important branch of study every winter. As a boy, I was often his companion in the fourth story of the hospital. Dr. Harrison was a general as well as a medical scholar. He delighted in all kinds of polite literature. He was peculiar in his habits of reading. The lighter works of general literature occupied his leisure hours in the warm summer months, while the long winter evenings were devoted to the severer studies of the sciences. He was never idle. Of an ardent and active temperament, he could not be idle. He was a man of the purest personal and professional honor. Toward his professional brethren he bore himself with fastidious care. In medical ethics he was a martinet. There were subordinate qualities about Dr. Harrison which should and can pertain to every physician. Every one can not be tall and graceful in form as Dr. Harrison was, with dark hair and com-

plexion and keen gray eyes; but every one can have agreeable manners, a dignified bearing and be neat in dress and person. Dr. Harrison was always so. He dressed simply but elegantly, and everything about him looked the refined gentleman. His office was attractive, the furniture good and in order, the books in his large library systematically arranged. When his patients called upon him they were impressed by these things. His horse was always well groomed, his harness bright, and his gig perfectly clean. In all regards he sustained the respectability of his calling. These personal details may seem unworthy of notice in an address like this, but they have an important moral. I am sure that the influence and usefulness of medical men in cities, villages, and country places, are materially lessened by inattention to such matters as were striking qualities of Dr. Harrison. Personal qualities are often tokens of professional character. Slovenly dress, unkempt hair, a dirty office, with a few broken chairs, and a rickety table with a dusty slate on it, are not likely to inspire the sick with pleasant ideas of their medical adviser. Such conditions spring from and react upon the character of the physician.

Dr. Harrison kept himself fully up with the advances of medicine. The first stethoscope I ever saw, and the first one brought to Kentucky, was imported by him. It was of the pattern originally devised and made by Laennec himself, and was in my possession for many years. Dr. Harrison talked of going to Europe to study this new physical diagnosis of diseases of the chest, but was for a time skeptical as to the reality of Laennec's great revelations.

In this connection my memory calls up the interesting fact that Prof. Henry M. Bullitt, of the Louisville Medical College, was the first physician in Kentucky, as far as I am informed, to carry the stethoscope into the daily study of his cases. He returned from Philadelphia in 1838, having become an expert in this method of diagnosis, under the teachings of Gerhard and Pennock. I was then pursuing the same study in the wards of the Marine Hospital, and owe my first advances to the instruction of Dr. Bullitt. Dr. Bullitt brought with him, besides this practical knowledge, a mind thoroughly and ardently imbued with Louis's inductive method of studying diseases. This method, substituting carefully-ascertained acts and the results inductively evolved from them for mere closet theories, was then bringing about a thorough revolution in the science of medicine. In this Dr. Bullitt played an efficient part by his pen and his teaching.

Dr. Harrison appreciated at an early day the importance of clinical medicine, and was among the first in the West to give clinical

lectures, in the wards of the Marine Hospital, to a class of students. The clinical advantages of Louisville caused him to look to that city as the future seat of a great medical school.

In 1834 Dr. Harrison removed to Philadelphia to find a more suitable theatre for the realization of his ambitious purposes. He was called very soon, however, to fill an important chair in one of the schools of Cincinnati. While teaching here, and for many years before, his pen was prolific in the production of valuable papers on various medical subjects. As a teacher of materia medica he was distinguished for his sound and practical therapeutics. He was an able practitioner, and brought before his class the ripe fruits of an extensive experience. He published a "Treatise on Materia Medica and Therapeutics," the first and only systematic work on this subject by a western physician. The practical portions of this work are excellent, and worthy of all respect even at the present day. The book is remarkable as being probably the last ever published in this country in which the doctrines of pure solidism are asserted and those of humoralism opposed. The idea of the absorption of medicines by the blood-vessels is vehemently rebuked.

In 1838 Dr. Charles Caldwell delivered the first clinical lectures of the University of Louisville in the wards of the Marine Hospital. I was his clinical assistant. In 1839 the first clinical amphitheater ever founded in the West was attached to this Hospital. From that room, for more than thirty years, the practical lessons of Drake, Gross, Eve, J. B. Flint, Bartlett, Ethelbert Dudley, Annan, Austin Flint, Palmer, Hardin, Middleton Goldsmith, D. W. Yandell, and their associates and successors, have been diffused throughout the length and breadth of this country.

Dr. Samuel L. Metcalfe, who died in Philadelphia in 1856, had a scientific character of which Kentucky may well be proud. Though known to many of the older physicians, he is possibly unknown to some of the junior members of the profession. In 1833 Dr. Metcalfe published at New York, a treatise, entitled "A New Theory of Terrestrial Magnetism," containing speculations of a remarkable character, and contending for the identity, in certain relations, of heat, electricity, and magnetism. In it were the germs of the great philosophical theory called "the correlation of forces," now accepted by the scientific world. This book was reviewed by Dr. T. S. Bell, in the *Louisville Journal*, shortly after it was published, and pronounced the first work of its kind on the subject.

In 1838 this work was expanded into a noble treatise, entitled "Caloric; its Mechanical, Chemical, and Vital Agencies in the Phenomena of Nature." Dr. Metcalfe took

the manuscript to London and endeavored to find a publisher. One was at last found, who agreed to publish it provided the author would permit him to submit the manuscript to the inspection and approval of a scientific reader employed for such purposes. The manuscript was kept for some weeks, and after many calls Dr. Metcalfe succeeded in recovering it, with the information that the judgment of the reader was unfavorable. Prof. J. B. Flint was in London at the time, purchasing the library for the Medical Department of the University of Louisville, and to him Dr. Metcalfe communicated these facts with the additional statement that he had ascertained, beyond a doubt, that Michael Faraday was the reader to whom his manuscript had been submitted. The doctrine of "The Correlation of Forces" which forms a conspicuous element of the fame of Faraday, was clearly and cogently taught in this new work of the Kentucky philosopher; and prior to the time that Dr. Metcalfe's manuscript was perused by Faraday he had never taught any thing of the kind. In 1843 Dr. Metcalfe published his treatise in two large volumes. It was received in Europe with an unusual amount of favor. In 1853 a second edition was published, a copy of which is owned by my distinguished friend, Dr. T. S. Bell.

Dr. Metcalfe resided near Simpsonville, Shelby County, while in Kentucky. The state, and especially the medical men, have abundant reason to cherish his well-earned fame. His reputation was so firmly established in Europe that he was importuned to become a candidate for the Gregorian Chair in the University of Edinburgh, which he declined.

In January, 1843, Dr. Wm. A. McDowell, a cousin of the great ovariotomist, and one of his aids in the performance of his operations, published an octavo volume, of two hundred and sixty-nine pages, entitled "A Demonstration of the Curability of Pulmonary Consumption in all of its Stages." Dr. McDowell removed to Louisville some years anterior to this date, with a name and prestige which soon won for him an excellent practice in all of the branches of medicine. Pulmonary consumption was one of his favorite subjects, and he soon put forth the claim of unusual success in the treatment of this disease. Such unusual results were announced as to excite in the minds of his professional friends an unjust suspicion of charlatanry. When his book appeared it was received not only with incredulity but with severe and sneering criticisms. Time, however, has done justice to Dr. McDowell's character and claims. The work, though defective in literary merit, crude in many of its ideas, and asserting powers for many medicines which they do not possess, contained not only the gerin but the substance

fully developed of the therapeutics of consumption now considered orthodox. He states that he first derived the views which he inculcates, modified by what he denominates the antipodal plan, from Dr. Joseph Parrish, of Philadelphia. To quote the language of his preface: "We concluded upon combining his theory with an antipodal plan which we ourselves had determined to adopt, consisting of a course of dietetics and regimen calculated to produce acquired gout; for we regarded gout as the extreme athletic or tonic morbid condition, consumption as the extreme atonic." Though this mode of presenting the subject be crude and coarse when compared with our more refined and seemingly more recondite rationale of treatment, the same great analeptic truth underlies both. I have no doubt that Dr. McDowell cured many cases of genuine phthisis pulmonaris, and prolonged the lives of many more, as the tonic and restorative plan, now universally adopted, is well known to do. His book was in advance of the times in this country certainly, and I do not know that a formal presentation of the subject had been made in Europe. Dr. J. Hughes Bennett, of Edinburgh, and other distinguished co-workers, were beginning to inculcate very strongly the same method of treatment, but had not given a published form to their views. This book of Dr. McDowell's has not secured the place in the literature of pulmonary consumption to which its intrinsic merit entitles it.

The Kentucky Institute for the Blind was incorporated in 1842. The movement for such a school in our state was inaugurated by Dr. S. G. Howe, of Massachusetts, who had so successfully begun the beneficent work in the latter state. Kentucky was among the first to follow the example of the "Old Bay State." From its foundation to the present time, this institution has been an object of just pride. Much of its progressive success has been due to an eminent member of our profession. "To inaugurate a great charity is a noble work; but to watch over it, to foster it, to stand by it from the beginning, to be its firm friend through every disaster and its counselor in every emergency; to give it unwearied attention for over thirty years, and sacrifice to its good an incalculable amount of anxious thought and valuable time, is surely equally noble. Such services the state of Kentucky has received from Dr. Theodore S. Bell." This is the testimony of one who is familiar with the devotion of this remarkable man to this institution. I can add my own testimony to the same effect. In my many professional drives in the direction of the Blind Asylum I rarely fail to meet Dr. Bell making his daily visit to his pet institution. By his efforts the Bible was stereotyped, and a copy given to every worthy pupil of the

school. Kentucky enjoys the honor of being the first state in the world to make a provision by law of this kind.

The history of the Blind Asylum has a bright page for this constant friend. The history of Kentucky medicine for the last forty years will also devote to him a large and varied space. Ever busy, working more hours every day and sleeping fewer than any one I ever knew, there is scarcely a department of medicine upon which he has not left his impress. As a public hygienist, as a medical philosopher and journalist, as a controversial writer, as a practitioner and teacher, he has long occupied and now occupies a conspicuous position. Seemingly untouched by time, he is to day as fresh and strong in physical and mental power as he ever was.

Kentucky was one of the first states of the West, probably the very first, to comprehend the incalculable value of a careful registration of the marriages, births, and deaths of her citizens. The importance of such registration, fully appreciated by many of the states of Europe and by a few of this country, was ably set forth in Kentucky, and impressed upon the public and legislative attention, with great force and effect by the first regular president of this Society, Dr. W. L. Sutton, of Georgetown. In effecting the passage of a very perfect law, by the legislature of 1851-2, he was ably re-enforced by Dr. W. S. Chipley of Lexington, and Dr. T. S. Bell, of Louisville. It will not be deemed immodest in me to say that a "Lecture on Sanitary Reform," delivered by me to the medical class of the University of Louisville at the opening session of 1851-2, and published by the class, had some influence, by the logic of its statistics, in determining the passage of the act. Dr. Sutton was the first registrar, and most successfully carried the law into execution. Before, however, even a partial realization of the great results anticipated by him, Dr. Sutton was removed by death from this sphere of public usefulness, and was succeeded by Dr. S. M. Bemiss, now of New Orleans. Dr. Bemiss proved to be a worthy follower of Dr. Sutton. He carried the work forward with zeal and ability, and his reports attracted much attention both at home and in foreign countries. The war of 1861 put an end to this as to all other civil pursuits, and since its close the law has not been revived. It is a reproach to the intelligence of the state, and most deeply damaging to her interests, that it has not been restored.

Dr. Sutton was one of the ablest men of the profession in Kentucky. Plain, modest, practical, an excellent observer, a good writer and a sound practitioner, the state has produced few superior to him. In sanitary science he was the foremost man among us. His brochure on Typhoid Fever, and a few other pa-

pers on medical subjects, gave him high rank in medicine proper.

In October, 1846, ether as first used by inhalation as an anesthetic. In the winter or spring of 1847 Dr. Joshua B. Flint administered it for the first time in Kentucky, and possibly in the west, in an amputation of a lower limb performed by him in the presence of a number of professional friends. I was present. The ether as then called "letheon," and administered by the aid of a complicated inhaler.

Chloroform as first brought forward by Sir James Y. Simpson, as a substitute for ether, in November 1847. It was used for the first time in midwifery in the city of Louisville, and as far as is known in the state of Kentucky, by Prof. Henry Miller, on the 20th of February, 1848.

Prof. S. D. Gross, was the first surgeon in Louisville to use chloroform as an anesthetic in surgery. He operated upon a servant under its influence in the family of Thos. F. Smith, removing a large tumor.

Professor Miller was a pioneer in several other important branches of his specialty. In an able and very candid paper denominated "Retrospect of Uterine Pathology and Therapeutics in the United States, especially in regard to intrauterine medication in chronic internal metritis," published by Dr. Miller, in 1871, it is certainly established that he was the first in the West to use the speculum uteri systematically in the treatment of diseases of the os and cervix uteri. This was as early as 1835, a period when the speculum was almost unknown practically to the profession in any part of the United States. The first speculum was brought to Louisville by Dr. Allan P. Elston, a distinguished young physician, who after a residence in Europe for several years returned to Louisville and resumed his professional labors. Failing health compelled him to retire after a short but honorable career. Dr. Miller was present when Dr. Elston examined one of his patients in the Workhouse Hospital, and becoming enamored of the speculum forthwith devoted himself to this interesting branch of surgery. It is needless for me to tell this audience with what distinguished results. For a time the treatment by the aid of the speculum was limited to the os and cervix uteri. In 1843 Dr. Miller extended this local treatment still deeper, and made applications to the cavity of the organ. In the paper above mentioned he proves conclusively that he was in advance of every one else in the United States in intrauterine medication. Kentucky justly claims priority in both forms of uterine therapeutics.

Dr. Miller is the author of the first systematic work upon midwifery ever published in the West, a work which ranks in original

thought and practical value among the best ever published.

Kentucky has been ever prompt to obey the requirements of philanthropy. Under the wise counsels and benevolent influences of Robert W. Scott, the legislature, in 1860, founded the Kentucky Institution for the Education of Feeble-Minded Children and Idiots. This is the only institution of the kind south of the Ohio River. There are several in the North, which have undoubtedly achieved surprising results in elevating the mental status of these unfortunate beings. They who have not observed the amount of mental improvement which may be effected by systematic training, in subjects who seem to be hopelessly feeble, would scarcely credit the real results. Our own institution promises to be a benefaction worthy of generous encouragement.

The Louisville College of Pharmacy was established in August, 1870. It has organized a school of pharmacy, with efficient professors, to teach the theory and practice of pharmacy, materia medica, chemistry, and the collateral sciences. Such an institution has long been needed in Kentucky, and there now exists no reason why every apothecary should not be a graduate of this or some other equally worthy college, and his qualifications fully ascertained, before he is permitted to dispense medicine. The interests of the public, no less than of the profession demand the enactment of such a law.

On the 28th of March, 1872, the legislature of Kentucky passed an act incorporating the "Central Kentucky Inebriate Asylum." This asylum is intended for the medical treatment, control, and restoration of the inebriate. It is invested with the power to receive and retain all inebriates who enter it, either voluntarily or by the order of the committee of any habitual drunkard. The committee of the person may keep him in the asylum at discretion. This act does not indicate by what power this committee is created. Some previous law must exist and I presume that an act, approved March 18, 1872, to provide for the preservation of the estates and security of persons of unsound mind, who by habitual or excessive use of poisonous drugs have become incompetent to manage themselves or estates with prudence and discretion, supplies the defect or provides for it. This act empowers the circuit or chancery court of the county to appoint a committee of one or more persons to take charge of any person who by the habitual or excessive use of opium or hasheesh, or any other drug, has become incompetent to manage himself or estate. The fact of such incompetency must be brought before the court by affidavit of two or more respectable persons, and an inquest must be held by jury in open court to inquire into the fact. The committee of custody and

control is invested with the power to confine such person in any private asylum or in one of the lunatic asylums of this commonwealth. It will be observed that this act specifies opium, hasheesh, or any poisonous drug, but does not mention by name alcohol and its preparations. A fair and scientific construction would include these; yet a doubt is left, and diffculty might spring up if any one chose to contest the point and insist upon a literal interpretation of the law. Habitual and inveterate drunkenness is certainly one of the forms of insanity. It is a condition in which the will is under the mastery of the passion. It is recognized by the best authorities as insanity, and has received the names of dipsomania and inomania. The interests of the individual and of the entire community would be advantageously consulted if this view of drunkenness were carried into practical effect, and the drunkard made amenable to the law which is applied to the ordinary lunatic. Whether the asylum just incorporated be one merely for voluntary confinement or one to which a jury may send any proper subject, Kentucky has led the advance, as far as I am informed, in this direction, in the valley of the Mississippi.

It is a creditable fact, reflecting the estimate in which Kentucky medicine is held by the profession of the United States, that our state has directly furnished two presidents of the American Medical Association, in the person of Drs. Henry Miller and David W. Vandell, and indirectly a third in the person of Dr. S. D. Gross, all members of this Society. No member of the profession in this country has received more honors at home and more foreign decorations than Dr. J. Lawrence Smith, another member of this Society.

The establishment of a new school in 1837, and of several others at later dates, led to important results in the history of Kentucky medicine. These schools have been the means of developing and bringing into more conspicuous position many of our own most gifted physician, and have invited from other places some of the most eminent physicians of the United States. Among the former may be mentioned Bush, Peter, Ethelbert Dudley, Miller, Powell, Hardin, Richardson, Bullitt, the Vandells, Foree, Breckinridge, Cummins, Bell, Bemiss, Bayless and Bodine. Among the latter, Bartlett, Silliman, J. B. Flint, Drake, Cobb, Colescott, Austin Flint, Sr., Eve, Gross, Palmer, J. Lawrence Smith and Middleton Goldsmith. Some of the best contributors to American medicine and surgery were made by several of these gentlemen while they were connected with the schools of Kentucky, and these may be fairly considered as belonging to the medical literature of our state. If all of the works were not written here, much of the matter which gives them in-

terest was obtained while their authors were connected with the schools and hospitals of Louisville. This is particularly true of the works of Gross, Drake and Austin Flint.

Connected with the schools of medicine which have existed in Kentucky many reminiscences of men and things arise in my mind. Among the most pleasant of these is my recollection of Dr. Wm H. Richardson, so long the professor of obstetrics in Transylvania. Few men ever had nobler traits of character. He was warm-hearted, brave, and a sincere friend. I knew him from my earliest boyhood, and have passed many happy and instructive hours at his magnificent home in Fayette county. His hospitality was profuse and elegant. I listened to his public teachings as a professor with interest and care, because I knew that he taught the truth as far as he possessed it. He was not scholarly nor graceful and fluent as a lecturer; but he was ardent and impressive, sufficiently learned in his special branch, and had at his ready command a large stock of ripe personal experience. I honor his memory beyond that of most men whom I have known.

I have often recalled with wonder the supreme satisfaction with which I looked upon the whole science and art of medicine, after listening to one course of lectures by Dr. John Esten Cooke, for so many years the venerable incumbent of the Chair of Practice in Transylvania, and in the University of Louisville. Few teachers ever held such sway over the minds of intelligent professional men as Dr. Cooke, over the entire medical mind of the valley of the Mississippi. Every one entertained profound respect for his great intellect and general learning, and for his purity of character and honesty of purpose. His theory of medicine was peculiar to himself, and elaborated with great care. It seemed to be built upon an impregnable logic. It was dogmatically taught, and carried captive the minds of the hundreds of young men who listened to his positive enunciations. There were no graces of oratory about him, yet he had a subtle way of infusing the poison of his false doctrines which were of singular simplicity and universal adaptedness. The practice growing out of them, so long dominant in the South and West, was equally simple and adaptable. Three familiar medicines constituted the trinity of his practical creed. Quinine and opium were not known in his materia medica. With the retirement of Dr. Cooke, in 1844, a new medical era commenced in the wide region over which his teachings so long prevailed; and now not a vestige of either his theory or practice remains except in the pages of his book and in the minds of a few of the ancient members of the profession.

Who that ever saw Dr. Charles Caldwell

can fail to have a living remembrance of him? Who that ever listened to him as a teacher can fail to recall with admiration the great intellect, the varied scholarship, the beauty and power of pen and the polished eloquence of the grand old man? He impressed every one by the stateliness of his personal appearance. He looked a very monarch, as, with scepter waving in his hand, he moved majestically along.

Dr. Caldwell was largely instrumental in carrying the Medical Department of Transylvania to its high point of prosperity. He was one of the great levers by which the School of Louisville was elevated to a still loftier position. By reason of certain attractive qualities, and peculiar powers foreign to pure medical teaching, he was eminently successful as an architect of medical schools. Despite these facts, the truth of history compels the avowal that he was never a teacher of true practical medicine, nor of that kind of medical philosophy which forms the useful medical mind. In these regards he has not left an enduring record in the annals of Kentucky medicine.

While Dr. Caldwell was yet holding a conspicuous place as a medical teacher a revolution was going on in the whole science of medicine. Old medicine was expiring and new medicine taking its place. Before the pressure of professional opinion created by this revolution, Dr. Caldwell, like his old colleague, Dr. Cooke, retired from professional life in 1849.

When the trustees of the Louisville Medical Institute were organizing the first faculty, in 1837, Dr. Caldwell, the chief artificer of the enterprise, was furnished with *carte blanche*, and sent on a mission to find a professor of surgery. A careful search eventuated in the selection of Dr. Joshua B. Flint, of Boston, Mass. Dr. Flint was a graduate of the Academic and Medical Department of Harvard. He was indorsed to Dr. Caldwell, by the best men of Boston, as a mature and thorough general and medical scholar, as a conservative, skillful surgeon, and as an acceptable teacher. He was tendered the chair of surgery in the institute, accepted it, and surrendering his many ties in Boston came to Louisville and united his fortunes with our school and our people. The impression which he made upon the profession in Louisville was favorable in the highest degree. He disclosed qualities which at once commanded confidence and respect. He was quiet and modest, avoiding rather than courtino conspicuous notice. His fine scholarship, literary and professional, made itself evident to all appreciative observers. He was not ostentatious in this regard. His sound judgment as a practitioner of surgery, and his rare doc-

terity and coolness as an operator, were readily recognized. In the field of operative surgery he was distinguished, beyond all other men of his time, for his conservatism. Many limbs and parts were saved by him which would have been lost by less considerate surgeons. He did not desire the eclat which great surgical feats elicit.

As a teacher, Dr. Flint came forward at a time when medicine and medical teaching were in a transition stage; when mere theories were giving place to facts, and things were taught and not mere speculations. His style was quiet, eminently and purely didactic. He was not a declaimer, had no *ad captandum* arts, said nothing for effect merely or to elicit applause. His lectures derived their ornament from correct rhetoric and classical illustrations. They were never soiled by coarse anecdote or indelicate allusions. He was a dignified teacher of the facts and truths of a serious science. He did not seek popularity with his classes. He hoped to win their confidence and approval by giving them sound instruction. Possibly he made the distance too great between the master and the pupil. This had not been the usage in this wild western country. It was so in the place of his education, and in the foreign schools. He was known to favor the use of the professorial cap and gown.

As a candidate for business before the public, he stood, coldly, upon his demeanor as a gentleman and his real merits as a practitioner. He had no arts about him to win popularity. He rather repelled than attracted people. He was punctiliously careful in his intercourse with the patients of other physicians. In this relation he was, as Charles Lamb said of his Father, "a man of losing honesty." Socially no man was more charming. Though dry and not much of a talker generally, on festive occasions his conversation was brilliant and his wit sparkling. At a dinner or evening party, among cultivated people, he was delightful.

I must mention one other quality in Dr. Flint. To his sick brethren he was constant in his attentions, aiding them by his wise counsel and cheering them by his hopeful words. Dr. Flint retired from the institute at the close of his third course of lectures, but was reinstated in his same chair after the lapse of a few years.

Dr. Daniel Drake, though claiming Cincinnati as his home, was really a Kentucky physician, having passed the most active years of his life in our state, and achieved his great fame as a teacher and writer while connected with our schools. It is unnecessary to detail his brilliant medical history. It is known to every one. I wish to mention the single honorable fact that he was the first physician of the West ever called to fill an important chair

in an eastern medical school. In 1830 he was appointed professor of theory and practice of medicine in the Jefferson Medical College of Philadelphia. Dr. S. D. Gross was appointed to the chair of surgery in the same school at a later day and, as far as I now remember, was the second western man thus distinguished.

As the intimate personal friend and fellow student of Dr. Jas. M. Bush, I had the opportunity to learn, at an early day, the genius as an artist, the quick perceptive faculties and the logical qualities of mind which form the basis of his high professional reputation. He was a student first in the office of Dr. Alban Goldsmith, and then in that of Dr. B. W. Dudley. He won the high regard of both of these eminent men. As soon as he graduated in medicine he became prosecutor for Dr. Dudley, and then his associate in the practice of surgery. When Dr. Dudley retired from teaching, Dr. Bush was appointed to the vacant chair, and discharged its duties with eminent ability. When Dr. Dudley retired from the field of his brilliant achievements as a surgeon, Dr. Bush had the rare courage to take possession of it. No higher tribute can be paid to him than to say that he has since held possession without a successful rival.

In the sciences collateral to medicine Kentucky has played a distinguished part. In the interesting departments of botany, geology, and chemistry, Dr. Charles Wilkins Short and Dr. Robert Peter are known throughout the scientific world. As teachers and modest, almost shrinking manner, the seemingly superb dignity, and the Addisonian style of the one, and the lucid expositions and brilliant illustrations of the other, must be remembered by all who ever listened to them.

I can not close these hasty and imperfect reminiscences, so unworthy of their subjects without the mention of one with whom I had the honor to be upon terms of personal and professional intimacy for more than thirty years. I refer to Dr. Llewellyn Powell. Dr. Powell held the chair of obstetrics, first in the Kentucky School of Medicine, for some years, and afterward in the University of Louisville. In both he was recognized as an able, eloquent and instructive teacher. He gave unqualified satisfaction to colleagues and pupils.

There are two classes of medical teachers: the one professional, trained in the arts of elocution and happy illustration, studiously skilled in the many ways of putting things; not subordinating matter to manner wholly, but relying largely upon felicitous modes of presenting their subjects. The other class includes physicians of mature study and observation, who have accumulated a large stock of practical knowledge from which to draw the matter of their teaching. Out of the fullness of their knowledge they are teachers. The graces of rhetoric and the tricks of elo-

cution are not conspicuous elements of their style. Dr. Powell happily blended the best qualities of both of these classes. By nature he was wonderfully endowed with the gift of language. Words the most appropriate were uttered promptly and gracefully at the bidding of every thought. Though he was not trained to the special work of teaching, he seemed to possess the happy facility of the professional teacher. With such a manner he was prepared to impress upon his pupils with singular effect the practical knowledge derived from many years of clinical observation.

Dr. Robert J. Breckinridge was reared and educated in Louisville. Of a distinguished family and singularly pleasing address, graceful and easy as a speaker, as a writer forcible, pointed, and scholarly, he would but for his untimely death have plucked the highest honors in the profession.

Dr. Carey H. Fry, an original member of this Society, died, on the 5th of March, in the city of San Francisco. He was present and took an active part in our memorial meeting of 1852. He was with us, in Louisville, in 1872, with undiminished interest in our proceedings. Truth warrants and personal affection impels me to say that he was the peer of the highest in all noble qualities of character. He was a refined gentleman, an accomplished physician, and a gallant soldier.

Whatever of renown the University of Louisville may have acquired, a portion of it is due to two distinguished members of another profession, Hon. John Rowan and Hon. James Guthrie. Judge Rowan was the first president of the board of trustees, and gave the influence of his national name to the foundation and early fortunes of the school. Mr. Guthrie became the president upon the death of Judge Rowan, and continued so until the close of his long and useful life. No institution ever had a more devoted friend. His fealty to it never faltered. Amid the cares of state and a large professional business, he always found time to work for the interests of the University. Whatever seemed likely to promote these interests met with his warm approval: whatever opposed them was sure to meet his stern and inflexible hostility. His name is indissolubly linked with an interesting part of the history of Kentucky medicine.

The medical journalism of Kentucky has always been of a high order. Though commenced at a later date than that of her sister state of Ohio, Kentucky was in advance of all other states of the valley. The *Transylvania Journal of Medicine and the Associate Sciences* as the first journal published in Kentucky. It dates from 1828, and continued to be the leading journal until its close, in 1838. Its successive editors were Professors John Esten Cooke, Charles Wilkins Short, Lunsford P. Yandell, and Robert Peter. The next was the

Louisville Journal of Medicine, in 1853, edited by Professor Henry Miller, L. P. Yandell, and Dr. T. S. Bell. This had a brief existence. Then came the *Western Journal of Medicine and Surgery*, edited at first by Profs. Drake and Yandell, and then by Professors Yandell and T. S. Bell. It lived from 1840 to 1855. The *Western and Southern Medical Recorder* was published by Dr. James Conquest Cross, in Lexington, in 1841-2. The *Kentucky Medical Recorder*, a continuation of the *Transylvania Journal*, was edited by Profs. Henry M. Bullitt and Robert J. Breckinridge, in 1851-2, in Louisville. Dr. L. J. Frazee edited a semi-monthly journal called the *Louisville Medical Gazette*, in 1859. Drs. Bemiss and Benson published the *Louisville Medical News*, in 1859-60. The *Louisville Review*, edited by Gross and Richardson, in 1856, and the *Louisville Medical Journal*, by Dr. Coleseott, in 1860, were short-lived. The *Sanitary Reporter* was published, semi-monthly, by the United States Sanitary Commission, in Louisville, in 1863-4.

A distinguished editor of the first journal of Kentucky still survives, in the full vigor of his intellectual powers, and is yet a large contributor of his mature learning and experience to the journalistic literature of the State. A brilliant and instructive teacher, first in Transylvania and then in the University of Louisville, no member of the profession in the West has written more gracefully and powerfully than Dr. Lunsford P. Yandell. No Kentucky author has written more or upon a greater variety of important topics. His scientific reviews, elaborate monographs upon various subjects of medicine, papers upon geology and other branches of natural history, his introductory and valedictory addresses, and contributions to general and popular literature exceed one hundred in number. Besides these, I can not omit to mention a most valuable unpublished report made to this Society, in 1853, upon the Medical Literature of Kentucky. It is a work of exhaustive research, and an accurate index to the papers of all the writers of Kentucky. It should be continued to the present time, and published by this Society.

The two journals which now represent this branch of medicine in Kentucky, the *American Practitioner* and the *Richmond and Louisville Medical Journal*, rank among the ablest of this country.

In a community which has founded and fostered so many great medical institutions, true science would necessarily always command respect and confidence. In no part of this country have the many forms of quackery met with so little encouragement. Everywhere, of course, will be found ignorance, credulity, and the other weak elements upon which medical fungi grow: but Kentucky

may be justly proud of her remarkable exemption from them.

Time and your exhausted patience admonish me that I must bring this historical *olla podrida* to a close. I trust that what I have said may serve to add something to the good name of our beloved state, and stimulate us to contribute yet more to the renown which our illustrious fathers have achieved for it.

I wish to say a few words as to the work of our present meeting. We have come, many of us, a long distance to do this work. Let us do it thoroughly and well. Let our sessions be devoted to scientific business, undisturbed, as far as possible, by matters which can not advance the interests of our beneficent calling, and may mar the usefulness and happiness of our annual reunion. I have a hope that this meeting may be signalized by the dignity of its conduct and the number and value of its contributions to medical science.

THE MEDICAL LITERATURE OF KENTUCKY.*

By LUNSFORD P. YANDELL, SR., M. D.,
Louisville.

I have undertaken, in compliance with the wishes of the Medical Society of Kentucky, to write a history of the Medical Literature of the State, and have the honor to submit the following report as the result of my labors. The report embraces a period of seventy-five years, and refers to the productions of more than two hundred Kentucky physicians who have written on medicine. It is consequently long, and, if deemed by the society worthy of publication, must extend through at least two volumes of its Transactions. In preparing it two plans occurred to my mind; one to present a continuous history of the various publications as they appeared; the other to take up the several authors in the order of their appearance, and then, having introduced them, to follow each down to the present time or to the close of his career. The latter has been adopted as having upon the whole most advantages, and this notably among others, that with every author named in the report will be seen at a single view a list of all his writings.

The report, besides notices of the medical literature of Kentucky, embraces some account of the origin of her medical schools, with biographical sketches of a number of her more distinguished medical men. In collecting the materials for it my chief reliance has been upon the medical journals of our country, and all these have been examined in which it was thought anything was likely to be found from the pens of Kentucky physicians.

The transactions of our society from the beginning and those of the American Medical Association have also been consulted. I have sought in addition to gather up all the introductory lectures delivered in our medical schools, and all the more ephemeral publications not contained in the journals of medicine. The reports of our hospitals, lunatic asylums, institutions for the blind and for deaf-mutes have also been referred to. The larger and more elaborate works on medicine have received due attention, and in addition to all I have had recourse to other than medical books for some facts that bear upon the history of Kentucky medicine. But with all my efforts to make the report complete I can hardly hope that many omissions will not be found in it which more time and greater care might have prevented; and still less reason have I to expect that my readers, however, courteous, will concur in all the judgments expressed concerning our medical writers and their works. On the latter point I claim only to have formed these judgments candidly, and without any feeling of which I am conscious that would tempt me to do injustice to any one. Almost all that relates to the medical schools of Kentucky I have written from my own recollection, and venture to hope that my account of them will be found free from prejudice. Whatever were the controversies in which I bore a part while connected with those institutions, the time since has been sufficient to allay all the animosities they kindled.

On an impartial review of the labors of Kentucky physicians and surgeons, and a candid comparison of her medical literature with that of her sister states, I believe it will be admitted that a work has been performed by her medical profession of which she may well feel proud. Her great physicians and surgeons lose nothing by comparison with the statesmen, orators and soldiers who have conferred luster upon her name. A near neighbor to the Sage of Ashland, his medical counselor and intimate friend, lived the most successful lithotomist of his times. With the hero of Buena Vista grew up to manhood in the backwoods of Kentucky another surgeon, to whose boldness and skill the world is indebted for ovariotomy, an operation which has already added years to the average duration of life in women. The most original and elaborate treatise on medicine by an American physician is from the pen of a writer who was reared in Kentucky, and while engaged in its preparation was a teacher in one of her medical schools. One of the most comprehensive systems of surgery in our language was written by a former teacher in the same school; and the work on practice which stands at the head of American medical books is made up

*Read at a meeting of the State Medical Society at Henderson April, 1875.

in part of materials collected by the author while a teacher of medicine in Kentucky.

Among those who were first attracted by curiosity or by a spirit of adventure to the wilds of Kentucky were two physicians whose names have come down to us. Dr. Walker visited the eastern borders of the state as early as 1747, a good many years in advance of Daniel Boone, and Dr. Connolly came out in 1770, only a year after the great pioneer. Connolly was one of the company which laid out the plan of the city of Louisville in 1773, a year before the first log cabin was reared by a white man in the state. These hardy adventurers came and saw the glories of our primeval forests and our fertile lands, but left behind them no history of their observations or adventures; and but little further is known of them than that Connolly became a tory on the breaking out of the Revolutionary War; after having shared in the confidence of Washington was captured with dispatches on his person hostile to the colonies, and confined many years in prison.

The medical literature of Kentucky dates back a few months beyond the beginning of the present century. It is an interesting fact that the idea of originating a medical school in Kentucky is as old as her literature. As early as 1799 the Medical Department of Transylvania University was partially organized, and Dr. Samuel Brown was elected to the chair of Theory and Practice of Medicine and Chemistry. About the same time Dr. Frederick Ridgely, who had distinguished himself as a surgeon in the Revolutionary army, delivered a course of lectures in the University to a small class of medical students. To this dignified and worthy pioneer of the profession therefore belongs the honor of having inaugurated the public teaching of medicine in Kentucky. Dr. Ridgely was a pupil and afterward a correspondent of Dr. Rush, and in all the moral elements that go to form a good physician, as well as in general scholarship and medical learning, he was a worthy pupil of his illustrious teacher.

No one who only for a moment turns his mind to the medical literature of Kentucky can fail to remark how great an influence has been exerted over it from the beginning by her medical schools. It originated with Dr. Samuel Brown, who was also first to receive an appointment in the earliest organized school. The medical journals, which have done so much to stimulate professional writing, have been chiefly sustained by our schools of medicine.

About the time that Dr. Brown was made a professor in Transylvania University he became a writer for the medical press. The first medical paper from the pen of a Kentucky physician that I have been able to trace is one written by him for the *American Medical Re-*

pository, at that time, I believe, the only journal of medicine published in the United States. It bears date of June, 1799, and is contained in the fourth volume of that journal. In the same volume is the report of a case by Dr. Brown, dated November, 1800, together with a second one of a later date; and these are followed, in subsequent numbers, by other medical histories, which, as possessing an inherent interest, as well as being matters of curiosity at this day, I shall notice in detail.

Dr. Brown, the father of our medical literature, was in every respect a remarkable man. In person he was much above the ordinary size of men, as well as pleasing and commanding. He was of a noble aspect, and his manners were in keeping with his presence. Highly gifted by nature, his fine parts were set off by all the advantages of education. A scholar, with a quick, observant mind, enlarged and polished by intercourse with the world; witty, fluent in speech, full of general knowledge and anecdote gathered from extensive travel, he was fitted to shine as a lecturer; and if necessity or taste had turned his attention seriously to the practice of medicine, as a physician he might have attained to the highest rank. But with all his powers and varied accomplishments he was not a successful teacher, nor for many years did he take any serious part in the practice of medicine. His mind was a discursive one, and he could not brook the drudgery of his profession. He was a desultory rather than a severe student, and was always captivated by novelty, at the same time his strong common-sense saved him from the wild philosophy which pervaded some of the schools of medicine in his day.

Dr. Brown was a native of Virginia, and on his mother's side was descended from John Preston, of the Blue Ridge, to whom so many gifted men of the South trace their lineage. He was sent to Edinburgh to complete his medical education, and heard the lectures of Monroe, Bell and Black, where sat beside him fellow-students from America; Hosack of New York, Davidge of Baltimore, and McDowell of Kentucky. He was wont to relate to his classes in Lexington that three of the young Americans resolved among themselves to become teachers of medicine on their return home. The idea, he told us, seemed preposterous to the students of the old country, and the Americans were not a little ridiculed for their lofty designs. "But," he continued, "we were not to be laughed out of our projects, and in a little while after his return Hosack was announced a professor in his native city, and Davidge was at work laying the foundation of the University of Maryland. I was appointed a professor in this young University, but the chair proved to be a barren scepter in my hand. After many years a new

organization was effected, in which my name did not appear. But the enterprise failed; The professors disagreed, got into controversies, aspersed one another in acrimonious pamphlets, and the faculty was broken up. A new attempt was made, and my long-cherished vision was at last realized. I found myself, after so long a time, in a flourishing medical school."

But as he adhered long to no system of medicine, so he soon grew tired of the business of teaching, and in five years relinquished the place in the school for which he had waited so long. Dr. Caldwell, the most scholarly of his colleagues, on account of this readiness to embrace new theories and systems, pursue them eagerly for a little while and then abandon them for something newer, was in the habit of comparing him to a 'cur-dog hunting rabbits.' He certainly was wedded to no doctrine in medicine. Of none could be ever have said, with the great Hunter, that "he would never give them up till he gave up the ghost." His anecdotes, which he told in the happiest manner, formed the most attractive feature of his lectures, or at least the parts which I find clinging most tenaciously to my memory. One in particular I remember related in his valedictory address to his class in 1824. "I knew a professor in Edinburgh," he said, "who from repeated dislocations of his lower jaw was liable to that accident every time he yawned. On account of his infirmity it became necessary to take with him constantly a servant who had learned the art of reducing the dislocation. His students soon came to undersand the case, and when at any time the professor grew tedious, they had only to set up a general yawning to excite the same movement in him, whereupon, before he thought of it, his jaw would fly out of place, and while his servant was at work setting it they would hurry out of his room, pretending to think the lecture was over. No doubt, gentlemen, he continued, with a pathos that affected the most thoughtless of his pupils, you would have been glad many a time this winter if you could have exerted the same control over my jaw."

Like nearly all great men, Dr. Brown was natural in manner and simple in his tastes, as far as possible removed from that pedantry and pomposity that all at one time seemed characteristic of medical men. The following incident is illustrative of this pleasing trait in his character. He had been called to see a sick child in consultation with a leading practitioner of Lexington, and among the measures agreed upon was a warm foot-bath. returning to the chamber of the little patient the physician in attendance proceeded to give directions to the mother in terms somewhat like these: "You will immerse the lower extremities of your infant in tepid water,

madam, and subsequently use friction freely with a napkin." The mother was lost in the succession of long words and raised her eyes in bewilderment. Dr. Brown saw her embarrassment, and hastened to relieve her by saying, "Bathe your child's feet and legs in warm water, my good woman, and wipe them dry with a towel."

The crowning labor of Dr. Brown's life, from which he expected the happiest results, was the formation of a society designed to promote harmony among the members of the profession. He styles it the Kappa Lambda Association. It included among its members many of the most eminent physicians in our country. Dr. Brown was its president, and it was his purpose to devote the evening of his days to visiting the branch societies in the towns and cities of the Union, thus cultivating the social relations of physicians. He resigned his chair in 1825, and died near Huntsville, Alabama, on the 12th of January, 1830.

Dr. Daniel Drake succeeded to the chair of Theory and Practice in the University. He had been connected with the efforts, in 1817, to form a medical school in Lexington. His associates were Drs. Dudley, Richardson, Overton, and Blythe. The enterprise failed, and the faculty was disorganized at the close of the first session; Overton returning to Nashville a good deal disgusted with medical schools, and Drake returning to Cincinnati to establish one in that city. The feuds that led to the disruption resulted in a bitter personal controversy which was carried on for a time in pamphlets, and ended in a duel between Dudley and Richardson. Drake was already an author before his first connection with the University, and as such was known beyond the bounds of his own country. His "Picture of Cincinnati" had given him a reputation among scientific men in Europe. With the circular letter announcing the reorganization of the Lexington school came from him to us in Tennessee a prospectus of the Ohio Medical College, setting forth its claim to public patronage. With his indomitable will and perseverance he had procured a charter for a school of medicine in Cincinnati. The gifted anatomist, Godman, was associated with him; but he was doomed to a second disappointment, for Godman, after a year or two, became discouraged and resigned his professorship. Two other colleagues became refractory and conspired against him. In his charter he had unwisely placed the governing power of the college in the hands of the professors, and when dissensions arose in the faculty there was no umpire to settle them. Having the appointing power, they claimed also the right to expel an obnoxious member. Dr. Drake was president of the faculty, and would at any time after the first year or two

have cheerfully accepted the resignation of his colleagues, but being in the minority he could not force them to resign. After Godman gave up his place but three professors remained, Jesse Smith, Elijah Slack and Drake. Things went on from bad to worse, until the majority made up their minds to get rid of the difficulties by expelling the president. A meeting of the faculty was accordingly called. The president had no right to decline taking part in it, and at the appointed hour appeared in his seat. A motion was made by Prof. Smith that Prof. Drake be expelled from his chair in the Ohio Medical College. It was duly seconded by Prof. Slack, and the president put it to vote. There were two votes in the affirmative, and the chair having no right to vote except in case of a tie, the president gravely announced that "Professor Drake was unanimously expelled from the Ohio Medical College;" and Dr. Slack taking up the only candle in the room where this scene was being enacted conducted the extruded professor down stairs.

In October, the same year, I met Dr. Drake in Lexington, whither I had repaired to attend my first course of lectures. He had returned to Transylvania again, chastened by defeat and with powers enlarged by experience. I saw him take the oath of office administered to the professors in the University, and heard his Latin oration when inducted into office. For colleagues he had Caldwell, Brown, Dudley, Richardson and Blythe. I know that large deductions must be made for first impressions on an ardent youthful mind. Much of the enthusiasm excited by new men and strange scenes, I am aware, is to be set down to the charm of novelty; but my conviction is still strong, after the lapse of these fifty years, that I have never seen in any medical school a more splendid combination of talent than adorned Transylvania University at that day. Caldwell, in all the personal and intellectual qualities that strike the eye and the ear in a lecturer, has rarely been equaled by a teacher of medicine. Though already advanced in years, he retained all the fire and vigor of early manhood. His spirits were buoyant and his temper sanguine, and whether on the rostrum or in his study, his air was that of a man who was doing his best. During the winter Drake engaged him in a debate on the question of spontaneous generation. He affirmed the truth of the doctrine, and adduced many facts to prove that acorns might be developed in the earth and fish in millponds. Drake overwhelmed him by authorities to the contrary, and out of a class numbering two hundred carried nearly every student with him.

Dr. Drake was in the habit of saying that "he" had resigned more professorships and been oftener expelled than any medical

teacher in the United States." His appointments amounted to not less than ten, and he was connected with five schools, two of which were his own projecting. It is significant that from his first effort in Lexington down to his last winter in the University of Louisville, as often as he came to Kentucky he found relief from pecuniary pressure, and with this also comparative peace and tranquility of mind; and that as often as he returned to his loved Cincinnati it was only to encounter jealousy and failure.

DOCTOR WALTER BRASHEAR.*

By M. F. COOMES, A. M., M. D., Louisville.

"So fleet the works of men back to their earth again,
That ancient and holy things fade like a dream."

In telling this story of Dr. Brashear's great work, and being able by accident to produce a likeness of him with it, forcibly recalled to my mind the fact so beautifully expressed in the lines at the head of this page. It is true that the works of men live long after their mortal bodies have "given up the ghost," but in these modern times it is a pleasure to resurrect from the ruins of the past, as it were, the likeness of some great man that had been lost to the world, and restore him to the place where he properly belongs. I always had a great desire to see the face of Dr. Brashear, and never let an opportunity pass if I thought there was a chance to find a picture of him. Persistence in this instance proved valuable. Mrs. Guthrie, a niece of Dr. Brashear's called on me for advice concerning her eyes, and while discussing the operation that was to be done, not knowing while we were talking that she was Dr. Brashear's niece, she remarked that her uncle was a great surgeon. I at once wanted to know who the uncle was, and of course was delighted to have the niece of so distinguished a man for my client. I expressed regret that some likeness of Dr. Brashear had not been left, as I had always wanted to see what kind of a looking man he was; and was sure that a large proportion of the medical profession shared this desire with me. When Mrs. Guthrie told me she had a likeness of her uncle, my cup was full to overflowing, and I did not rest until I had it in my possession, and in truth, in the hands of the photographer, and finally in the hands of the finishing artist; and now that I have succeeded in reclaiming the image of this illustrious man, and in giving the profession some additional facts about him that have heretofore been unknown to the public, I feel that I have been

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fully repaid for my long and diligent search, because I know that the profession all over the world will rejoice at having an opportunity to critically view the face of this distinguished surgeon, and read in its outlines the truth of what has been said of him.

Dr. Walter Brashear, the subject of this sketch, was born in Maryland in 1776, and his father moved to Kentucky in 1784 and engaged in farming in Bullitt County, near Shepherdsville. Walter was the seventh son, and according to tradition, was intended for a doctor. His father seems to have been mindful of this fact, and sent him to Transylvania

delphia and attended upon a course of lectures at the University of Pennsylvania." At that time, Barton, Physick and Rush illuminated the medical horizon of the East and were connected with the University of Pennsylvania, and no doubt but young Brashear was deeply impressed with the greatness of this trio of medical savants, for in these three was found all that go to make up a great surgeon and doctor; and Brashear was certainly the personification of physician and surgeon, as his modest but remarkable career will show.

Dr. Brashear was of a restless disposition, and after a year spent in Philadelphia, he



DOCTOR WALTER BRASHEAR

1776-1860

United States Senator from Louisiana.

University at Lexington, then the great literary institution of the Southwest

Young Walter was eager for knowledge, and, we are told, held a high rank as a Latin scholar. After finishing his literary education, which was at the age of twenty, he began to read medicine under the tutelage of Dr. Frederick Ridgely, of Lexington, and remained under his care for two years, and at the end of that time, "he rode on horseback to Phila-

delphia and attended upon a course of lectures at the University of Pennsylvania." At that time, Barton, Physick and Rush illuminated the medical horizon of the East and were connected with the University of Pennsylvania, and no doubt but young Brashear was deeply impressed with the greatness of this trio of medical savants, for in these three was found all that go to make up a great surgeon and doctor; and Brashear was certainly the personification of physician and surgeon, as his modest but remarkable career will show.

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days. The American did not comprehend this, but was given to understand that if the woman died inside of three days, that he would be beheaded. This was evidently a part of the programme that had been kept back, but as there was no other alternative, he remained the three days, and at the end of that time his patient was doing well and he was permitted to go.

Probably no man living was better prepared to hear this ultimatum than Dr. Brashear, for the man who had the courage to undertake the amputation at the hip-joint in the month of August, in Kentucky, without any precedent to guide him, no anesthetic and with untrained assistants, certainly had courage to do anything. In the first part of this paper, I have quoted liberally from an address delivered by Prof. David W. Yandell in 1890, before the American Medical Association, and I can not do better than to use his language in reporting the work of Dr. Brashear. He says: "In 1806, the earliest original and successful surgical work of any magnitude done in Kentucky, by one of her own sons, was an amputation at the hip-joint. It proved to be the first of the kind not only in the United States but in the world. The undertaking was made necessary because of extensive fracture of the thigh with great laceration of the soft parts. The subject was a mulatto boy, seventeen years of age, a slave at St. Joseph's College. The time was August, 1806; the place Bardstown; the surgeon, Dr. Walter Brashear; the assistants, Dr. Burr Harrison and Dr. John Goodtell; the result, a complete success. The operator divided his work into stages. The first consisted in amputating the thigh through its middlethird in the usual way, and in tying all bleeding vessels. The second consisted of a long incision of the outside of the limb, exposing the remainder of the bone, which being freed from its muscular attachments, was then disarticulated at its socket." Thus briefly detailed, is an account of one of the greatest surgical operations performed in the civilized world, and Dr. Yandell, in his report, says: "But whether or not Brashear had ever heard or read a description of what had been accomplished in this direction by surgeons elsewhere, the young Kentuckian was the first to amputate at the hip joint in America, and the first to do the real thing successfully in the world. Dr. Brashear seems to have set no high estimate of his achievement, and never published an account of the case."

Ex-Governor Robert Wickliffe, of Louisiana, who is a near relative of Dr. Brashear's, is my authority for the facts concerning his imprisonment in China at the time that the amputation of the breast was performed and Governor Wickliffe also told me that Dr. Brashear was offered the "Chair of Surgery" in the Academy of Science at Paris, France.

His wife, who was exceedingly anxious to have him accept the position, was much surprised to hear him say that he would not think of accepting it, as it was bad enough to live in Paris under any circumstances, much less to occupy the position of a poor doctor.

Dr. Brashear was not without political aspirations, and it would appear that he was much above the average politician, as he succeeded in being elected to the United States Senate from Louisiana.

Dr. Brashear's boyhood was probably not without some very exciting experience, for at that time this country was full of Indians, and his father was a noted Indian fighter.

Dr. T. B. Greenly, of West Point, Ky., told me a few days since that he attended Dr. Brashear's brother, Robert, in his last illness, some years since, and, while speaking of the matter, recalled an incident that happened at the Salt Works, which were owned and operated by Dr. Brashear's father, Ignacius Brashear. The Doctor and his brother were boys that were not to be run over by every fellow that chanced to pass, and, in fact, were noted as fighters. In those good old times, the weapons that God gave men were about all that were used to settle personal difficulties, and it seems that Walter and Robert Brashear knew how to use them. On a certain occasion a "bully" happened to be in the Brashear neighborhood, and concluded he would go up and whip the two Brashear boys, and when he arrived he found Walter at the Salt Works by himself, and it did not take long for him to pick a quarrel with young Brashear. Brashear, however, felt that the stranger had the best of him in size, and probably in the "fistie-art" he would have little chance, but he determined to get the best of his antagonist and get the first lick, and other advantages also if they were to be had. There was a pond near by, and at a favorable moment when the stranger stepped near the pond, Robert sent out a right-hander and landed it under his ear, which sent him sprawling into the pond, and quicker than thought Brashear was on top of him, and in a short time the fellow was crying for mercy.

Dr. Brashear was married at Lexington, in 1802, to Miss Margaret Barr, by whom he had seven children: three sons, Robert, Walter and Darwin, and four daughters, Mary, Rebecca, Caroline and Frances. I have no history of any of his daughters, save one, who is living in New Jersey. None of his sons ever became doctors. Darwin died young, and Robert was a successful sugar planter in Louisiana, and died during the late war. His son, Walter, a grandson of the doctor, is now in Louisiana.

The Brashear home in which he was reared is still standing in Bullitt County, in a fair

state of preservation. Dr. Walter Brashear died October the 23rd, 1860, aged eighty-four years, and is resting in the soil of his adopted State, Louisiana.

DOCTOR JOSHUA TAYLOR BRADFORD.

By W. W. ANDERSON, M. D., Newport.

In writing the biography of a modest man many years after his death one is beset with serious difficulty because of the scarcity of data. The modest man however great his worth and however important his work, does not thrust himself into the limelight of pub-

that its meager offering may call forth from the memory of those still living a richer and more intimate history of this remarkable man.

McDowell's great work had not succeeded in establishing ovariectomy as a proper surgical procedure. It had barely blazed the way and few had dared to walk therein and most of these few had trodden upon disaster. The great schools of London, Edinburgh and Paris to which the American profession looked for inspiration and authority condemned the operation. Surgeons turned deaf ears to the distressed cry of the unhappy sufferers with ovarian tumor and disease and abandon-



DOCTOR JOSHUA TAYLOR BRADFORD

1817--1876

Who revived ovariectomy after it had fallen into disuse in the middle of the last century, and was a distinguished medical officer in the Civil War.

licity. Much of what he was and what he did are likely to be lost in the lapse of the years.

Were the character and labors of the late Dr. Joshua Taylor Bradford of Augusta, so to fade into oblivion an irreparable loss will have been sustained. That the honor of Kentucky medicine and the glory of its great achievements be not dimmed by forgetfulness this biographical sketch is indited in the hope

ed them to their fate. It required a man of both sympathetic and courageous heart to undertake their relief, and a man of rare learning and consummate skill to succeed in the undertaking. Such a man was Joshua Taylor Bradford.

He was born in Bracken County, Kentucky, in 1817, the son of a minister, a descendant of William Bradford of the Mayflower Pilgrims,

second governor of Plymouth Colony, and also of William S. Bradford, second U. S. Attorney General under Washington. He was educated at Augusta College, Transylvania University and the Jefferson Medical College, Philadelphia.

He was an ardent admirer of Ephraim McDowell both as a great surgeon and as a Christian gentleman. That he was an earnest Christian himself is attested by the fact that his medical writings abound in apt quotations of scripture, and that his life even more than his language portrayed a generous good will toward his critics and an unselfish service to all, which are the best possible evidences of discipleship to the Great Physician who went about doing good.

Lizars of Edinburgh had attempted to follow McDowell's lead but losing 75 per cent of his cases gave it up. No serious attempt to revive the operation anywhere in the world appears to have followed for a score of years. Then it was taken up by Clay of Manchester, England, with a mortality gradually diminishing between the years 1842 and 1856 from 40 per cent to 25 per cent. By this time Dr. Bradford had revived the operation on its native soil of Kentucky in a series of seven consecutive cases without a death. On hearing of this Mr. Clay wrote him, "I am delighted to hear of your great success, far exceeding my own." Dr. Samuel A. Cartwright of New Orleans, himself a noted surgeon, wrote in 1857, "The writers and teachers of London and Paris will find difficulty in believing that a physician in the little town of Augusta, in far distant Kentucky, has been engaged in seven successive operations for ovarian dropsy, all proving successful, when their most successful surgeons have failed in five out of seven."

Dr. Bradford's complete series of ovariectomies numbered thirty, with a mortality of only ten per cent. When it is remembered that he died in 1871 at the age of 54, that all his work was done before the use of antiseptics, and some of it before anesthesia, it stands as a wonderful record of achievement, unequaled in all the world before the days of modern surgery. And yet there was no magic or flight of genius about it. Like intelligence and training, equal courage and care, the same thoughtful devotion and painstaking diligence, have always brought forth extraordinary results and will still do so.

Dr. Bradford's life and work well illustrate the thought that the man who undertakes responsibility for the life of his fellows should be truly religious, not in the dogmatic or doctrinaire sense but in the practical outworking of his everyday existence. A lover of his kind he could not rest easy in the presence of suffering unrelieved. It was not sufficient for him that the surgery of his day offered no re-

lief. He must seek a better surgery. Deeply conscious of the sacredness of human life he could not operate recklessly, or repeat the mortality of Lizars and others. He must find a safer way. Keenly sensitive to criticism and sternly faithful to duty he could consent neither to deserve the one nor to desert the other. In the midst of an operation at Paris, Kentucky, the patient collapsed. His assistants, appalled by the serious situation and the fear of criticism deserted him, refusing to have anything more to do with the case. Applying restoratives, he answered their implied condemnation by saying, "Gentlemen, this operation has been conducted according to the best surgical knowledge of the day," completed the work unaided and saved the patient.

He studied his cases with uncommon care, taking a very complete history, eliciting all signs and symptoms with practical skill, and coordinating the whole with fine diagnostic reasoning. He attributed his success to a careful selection of cases. This better selection was due in turn to more efficient diagnosis. He never mistook a solid tumor for a cyst, or one widely adherent for one comparatively free, and thus avoided the dangers of what in his day would have been reckless surgery.

In spite of his brilliant results, so far ahead of his time, he was not satisfied. His faithful report of his unsuccessful cases portrays a keen sense of failure in such instances. He read everything available in his line and corresponded with the leading surgeons at home and abroad, eagerly seeking betterment of his work. His very full report on ovariectomy to the Kentucky State Medical Association in 1857 represented two years of arduous labor in collecting and tabulating cases and working out the conclusions to be drawn from them. He seems to have been the first to solve the problem and demonstrate secondary hemorrhage was due to retraction of the stump. He insisted on the most careful preparatory and after treatment, and followed up his cases to restored health or to the post mortem table when fatal. To him each patient was a real personality to be served, not merely a specimen of scientific interest.

This holding himself sternly to the doing of his best, this "New England conscience" of the man, was the outgrowth of a sincere Christianity and a deep devotion to his profession, expressing itself not in creeds but in deeds. His was the heritage of a goodly race and his a worthy progeny. A son and daughter, the offspring of his marriage with Sarah Armstrong, still survive; Rev. W. G. Bradford of Augusta and Mrs. H. D. Yoder of Topeka, Kansas, both persons of note in the clerical and literary world.

Dr. Bradford's achievement in other lines of medicine and surgery were only second to those in ovariectomy and would, of themselves,

have given him high rank in the profession.

He served in the Federal army in the Civil War as surgeon of Nelson's brigade. At Pittsburg Landing he led back to the firing line a body of troops that had lost its officers and was retreating in disorder, and was then found treating a wounded and captive Confederate. While home on sick leave he commanded the Home Guards in the defense of Augusta against the superior force of Gen. John H. Morgan and after the surrender he was embraced by Gen. Morgan who exclaimed, "I love a brave man wherever I find him."

A man of his worth could not escape fame. Gross's surgery, shortly before his death, accorded him the lowest mortality in ovariectomy on either side of the Atlantic. He was offered the chair of surgery in the Medical College of Ohio as successor to his friend, the famous Dr. Geo. C. Blackman, and was often urged to seek larger fields for his talents but always declined, having no ambition that centered in himself.

It seems part of the irony of fate that his man who did so much for the advancement of abdominal surgery should have lost his own life by an abdominal tumor in 1871 at the early age of fifty-four. But even in this he proved the courage of his convictions by submitting himself to an operation which, however, proved unavailing. Perhaps it may in some measure be said of every savior of men, "He saved others. Himself he can not save."

SELECTION FROM A REPORT ON OVARICTOMY.*

By JOSHUA TAYLOR BRADFORD, M.D., Augusta.

"Go to the Parthenon and find out, not what bunglers, but what great men have left undone."—Sculptor to his Pupil.

A WORD OF EXPLANATION.—To you, members of the "Kentucky State Medical Society," who had confided to my humble ability a "Statistical Report on Ovariectomy" a word of explanation is justly due, as well as to myself.

For two years my leisure moments have been employed in the collection of statistics on ovariectomy, and few of you, who have not been pioneers in a newly settled territory, but have traveled upon a beaten track, where the finger board has pointed out the way, are aware of the labor it has cost me. The writing of a report is a small matter, but the collection of material upon a subject, about which so little is known, is by no means, an easy task.

But to the explanation, I adopted Dr. Atlee's tables of 222 cases as a basis for my report, and up to January had registered, including his table, 289 cases. About that time,

Dr. Lyman, of Boston, very kindly sent me his "prize essay, just published by the Massachusetts State Medical Society," and to my unexpected surprise, it contained three hundred well-reported cases of ovariectomy. I can not express to you my feelings at that moment; it was but too evident, at a moment's glance, that both he and myself, for many a weary hour, had been laboriously at work for the same purpose, and collecting materials from the same source. And perhaps I, better than any one of you, appreciate the immense labor, the collecting and classification of his cases, cost him. I examined the report carefully, and found that he had collected 11 cases which I had not, and I had collected 20, including Mr. Clay's unpublished cases, which he did not have, my 20 being principally unpublished cases. After a short correspondence with Dr. Lyman, and no little reflection, as to what would be the better course to pursue, I have concluded as a supplement to this report to adopt the analysis of Dr. Lyman's 300 cases.

This singular coincidence, so far as I am personally concerned, is not without its regrets. But to this society, among the first, if not the very first, in this country, to call for a report of statistics, I felt anxious, so far as my ability could be exerted, to present a report, which would not only be worthy of the society, but creditable to myself. And whilst I, as your servant, regret yielding precedence to Dr. Lyman, after so much labor on my part, I confess sincerely, and with all due credit that up to this period, no writer has performed the task so well as he.

With the exception of the chapter on the diagnosis, I have, therefore, in this short time, had to write a new report, or reverse a principle in that school, of which I am a pupil, "that true magnanimity does not consist so much in never falling, but in always rising when we fall."

The interest of the present report will consist principally of—

1st. A short history of Ovariectomy and the principal operators.

2nd. Diagnosis, and its errors.

3rd. Letters from Professors Gibson and Atlee, of Philadelphia; Clay, of Manchester, England; Mussey and Blackman, of Cincinnati; Miller, of Louisville, Ky.; Saml. Cartwright, of New Orleans, La.; and Dr. B. W. Dudley, of Lexington, Ky.

4th. Statistics of all the operations performed in Kentucky, with a short notice of each case.

5th. Operations with which I have been connected, with here and there, throughout the report, some practical allusions.

Perhaps no branch of surgery, for a period of time, so completely divided the members of the profession, both in Europe and in this country, or created a more vehement and bit-

*Read before the Kentucky State Medical Society, at the Seventh Annual Meeting, in Louisville, April, 1857.

ter opposition, than did the operation of ovariectomy.

It has been regarded as a monstrous innovation upon the legitimate principles of surgery; and the defects and errors of diagnosis have been seized upon by its opposers with a "leopard-like spring of energy," which is seldom met with in the "healing art."

And here (as I do not expect to write an essay on ovariectomy,) I trust you will pardon me for alluding to a report on surgery, read before this society in 1854. It may be remembered that the reporter, in his allusion to the operation of ovariectomy, denounced the operation and operators with a fierceness which would seem to interdict that well-established principle of philosophers on all subjects, that an honest difference of opinion may exist; and that until the light of reason has clearly demonstrated the folly and preposterousness of such opinions, there is due that amount of courtesy which becomes the liberal investigation of truth.

The tone of medical journals the past few years, and the march of public opinion in favor of ovariectomy, may have taught you that the operation has outlived the scrutiny of that report.

There are but few improvements in science, which, in their struggle for legitimacy, have not their opposition.

Even the immortal Jenner, whose discovery of vaccination links with his name the brightest remembrance of the past, met with opposition; and it was written in books, and by the wayside, that they who were vaccinated must of necessity be "converted into brutes; that children sprouted horns, others had the hair of calves" and that it infused into the system the constitutional diseases of those from whom the virus was taken.

Dr. Simpson's discovery of chloroform, that Messiah-like unction which hushes into repose the most severe pain, also had its opposition, and the physician who would use it, was considered as "breaking alike the laws of nature and of God."

There still exists in the minds of some of the profession a contrariety of opinion, as to whom the credit of the first operation is justly due. So far back as 1782, Dr. L'Aunomer, of Rouen, has the credit, according to Mason Good and Mr. Brown, of Europe, and Dr. Atlee and Dr. Lyman, of this country, of performing the first operation for ovariectomy.

Dr. McDowell's operation as you well know, was performed in 1809. Now, let us examine and see which is ovariectomy, and whether, as Professor Gross says, the case of L'Aunomer is any thing more than an "abscess of the ovary, consequent upon parturition.

I quote the case of L'Aunomer as reported by Dr. Lyman: "The disease," he says, "ap-

parently followed delivery; had obstinate diarrhoea, and a purulent discharge from the vagina, increased by pressure on the tumor. Incision four inches, along lower edge of oblique externus, and scirrhus ovarian cyst, the size of an egg, was found in connection with an abscess, which was tapped, and a pint of dark fetid pus issued from the Fallopian tube, with which the ovarian abscess communicated. The adhesions were torn away between the tube and the ovary, and the latter removed. No ligature used. The cavity of the abscess was filled with lint, dipped in the yolk of an egg and in honey. Suppuration of the abscess ceased the 20th day, and she left the hospital well.

The well-known case of Dr. McDowell was Mrs. Crawford. Incision nine inches long, and made on the left side of the median line, some distance from the outer edge of the straight muscle. As soon as the incision was made the intestines gushed out on the table, and so completely was the abdomen filled by the tumor that they could not be replaced during the operation. A ligature was applied around the pedicle, tumor opened, and 15 pounds of gelatinous fluid removed; pedicle divided, and sac, etc., extirpated. The whole tumor weighed twenty-two pounds and a half. In five days Dr. McDowell found her making her bed, and in twenty-five days she went home well.

You will recollect, that in the case of L'Aunomer, no ligature was applied, simply an incision made in the abdomen, and the the abscess tapped. It is not fair to presume, that when a purulent discharge was issuing from the vagina, and the discharge increased by pressure, with a tumor so small, that the incision in the bowels was for any other purpose than the simple operation of paracentesis, or to ascertain the real cause of the disease.

In Prof. Gross' Report on "Kentucky Surgery" to the State Medical Society in 1852, I beg leave to refer you for such information as relates to the early history of ovariectomy in Kentucky, and for an interesting biographical sketch of Dr. Ephraim McDowell. I have alluded to the cases of Dr. McDowell and L'Aunomer, from the fact that from one or the other, we are to date the memorable epoch of ovariectomy.

It is difficult to ascertain how often our renowned Kentuckian (Dr. McDowell) operated; some of his relatives say thirteen times—of eight operations there is an authentic record, and of these seven were successful; in two, the tumor was not removed, and in one there was no tumor found; this last, however, was a case of his and Dr. Smith's, which, if included among his cases, would make nine operations.

Such success in a difficult and dangerous capital operation, just springing into exist-

ence, without precedent or a foot-print where the son of man had trod, is without its equal, and shows the operator to have possessed a happy union of courage and prudence.

Dr. McDowell's success in other departments of surgery was equally signal. He is said to have operated thirty-two times for stone, without losing a case. One of his patients was President Polk, whose operation took place prior to his election to Congress. Dr. McDowell was remarkably cautious in the selection and preparation of his cases; and, to this fact, together with his steady hand and accurate anatomical knowledge, may be ascribed much of his success. It is a singular fact, that Dr. McDowell always operated on Sunday morning, giving as a reason, that he always "liked to have the prayers of the church."

He was a liberal and charitable man, and his fees were generally regulated by the ability of his patients. On one occasion he agreed to operate upon a lady near the Hermitage, in Tennessee, for five hundred dollars. After the operation was completed and he was about to return home, he was presented with a check for fifteen hundred dollars.

This is, perhaps, the most princely fee which any surgeon has obtained, either in Europe or this country, if we accept the thousand guineas paid Sir Astley Cooper for an operation performed in the West Indies. I have read, some where, that the learned Apono, of Pabrea, refused to visit Pope Honorius IV. without receiving four hundred ducats for each day's visit.

In an operation for stone, I once had the honor of holding the staff for Professor S. D. Gross, of Philadelphia, for which operation he received one thousand dollars.

Dr. Gross, from whose report I have taken most of the above incidents, thus sums up Dr. McDowell's character: "He was a deep and original thinker, a bold, fearless, intrepid, and original operator; a faithful and adroit physician, an honest, upright, conscientious and benevolent man, whose career, in whatever aspect it may be contemplated, affords an example worthy alike of our admiration and imitation."

The remains of Kentucky's "first great surgeon" sleep in the burial ground of Gov. Shelby, five miles from Danville. Some time since, while on a visit to the interior of Kentucky, my curiosity led me to visit this memorable spot, and while looking upon the modest and plain marble slab which bears the simple inscription "Ephraim McDowell," I felt as if at the grave of one whose sacred labors were worthy of my pilgrimage thither; and as memory wandered back to the period of his first ovarian operation, when the incredulous scoffs of the first English surgeons, and the caustic derision of the *London Medico-Chirurgical*

Review, together with the refusal of Dr. Physic, the "father of surgery," in our own country, to publish or read to his class a copy of Dr. McDowell's operation; I could but feel a becoming pride, that the "backwoods Kentuckian," as Dr. James Johnson styled him, had triumphed.

The success of our distinguished Kentuckian in private practice, as in surgery, had few if any equals; and while I listened in his own town to those who knew him well, I was never so forcibly reminded of the skill of Him who "cleansed the leper, opened the eyes of the blind, and unstopped the ears of the deaf."

MR. LIZARS.

Next to our renowned Kentuckian appears Mr. Lizars, of Edinburgh, who, in 1823, first attempted the operation in Edinburgh. He operated by the long incision, after the manner of McDowell. One out of his four cases, recovered. His first case was examined by the most learned men of Edinburgh, and, after agreeing that it was an ovarian tumor, Mr. Lizars proceeded to operate, whereupon obesity and flatulence revealed themselves instead of ovarian tumor. His second case recovered; the third died; and in the fourth, which I shall notice elsewhere; the operation was abandoned, he having encountered a fibrous tumor strongly adherent.

The cases of Mr. Lizars, from their marked errors of diagnosis, set the whole surgical world in commotion, and while McDowell's operations were eagerly looked too, upon the other side, the failure of Mr. Lizars's operations gave the English surgeons, already willing to doubt the success of Dr. McDowell's cases, room to waver, and for several years the operation slumbered.

It was the slumber, however, of a vigorous child, whose features seemed as if some "happy thought" of coming triumph played at its "heart-strings," when, in its strength, it would go forth, "giving beauty for ashes, the oil of joy for mourning, and the garment of praise for the spirit of heaviness."

MR. CHARLES CLAY.

In 1842, Mr. Charles Clay, of Manchester, England, now, perhaps, the most distinguished operator in the world, commenced his series of operations. He informs me, by letter, to which I refer you as a part of this report, that he has now operated seventy-six times, and may be read thus:

"Of first 20, 8 died, 12 recovered;
Of second 20, 6 died, 14 recovered;
Of last 36, 9 died, 27 recovered.
First cases, 1 death in 2½;
Second cases, 1 death in 3½;
Last cases, 1 death in 4."

"This," says Mr. Clay, is "I believe, the legitimate mode of viewing the question pro-

gressively, by which the mortality is shown to be gradually lessened by practical experience."

Charles Clay was the first English surgeon to perform the operation of ovariectomy by the long incision, and it is said by Dr. Blundell, that "perhaps no operator in any branch of surgery ever had such a weight of professional odds against him, as had Mr. Clay in the operation of ovariectomy."

He had triumphed, however, and his record is before you, over his own signature.

Mr. Clay is now fifty-six years old. He is reputed to be a "bold, prudent, graceful, and elegant operator in any department of surgery." At the time of his fifty-fifth operation, not less than "eleven hundred pounds of diseased structure has been removed from the human body in this special operation alone." It would now, perhaps, make an average of twenty-five pounds to the patient, amounting to near two thousand pounds.

Mr. Clay is now in possession of the largest obstetric library in the world, being able to quote from 2,500 authors on that subject alone; and whilst yet a student, he is said to have taken notes from 500 volumes.

In the *London Medical Circular and General Advertiser*, to which I am indebted for much of the information relative to Mr. Clay, I find letters from James Blundell, congratulating Mr. Clay upon his success. I will quote briefly a part of each.

Dear Sir: My cordial congratulations on your success; not the hap of lucky incident, but the well-earned result of a just mixture of enterprise, science, and exact care. A few years and I trust it will appear, abdominal surgery is at present only in its infancy; but then, what an infancy! how full of bloom and promise!

JAS. BLUNDELL, M. D.

Again, in another letter dated October, 1845:

"Forbe's review I have just read. It ought not to disturb you for a moment. These men are butting their heads against a stone wall; and the grimaces they make on feeling the solidity of the materials, are as amusing as they are pitiable. Applauded by all who have honesty and intelligence enough to appreciate your efforts, you may well persevere, for to use the reviewer's own citation, it is indeed a 'high and holy undertaking.' Yours, etc.,

JAS. BLUNDELL, M. D.

Professor Simpson, of Edinburgh, among many others, encouraged Mr. Clay, sent him patients for his opinion, and was the first to suggest the term ovariectomy, which Mr. Clay at once adopted.

DOCTOR WASHINGTON ATLEE

Next in the arena of operators, in 1844, our own countryman, Dr. Washington Atlee, of Philadelphia, commenced his series of opera-

tions. He informs me by letter, which is made a part of this report, that his operations now, March, 1854, amount to twenty-three cases.

Of first 10, 6 died, 4 recovered;

Of second 13, 4 died, 9 recovered.

The profession, in this county, owe Dr. Atlee a lasting debt of gratitude for his vigorous and energetic exertions in behalf of the operation of ovariectomy. His table of cases bearing date as far back as 1701, and coming up to 1851, comprising 222 operations then the most numerous collected in the world, must have cost him an incredible amount of labor. And this arduous task has been no less signal, than the brilliancy and success of his operations.

Dr. Atlee's "Prize Essay on the surgical treatment of certain fibrous tumors of the uterus," together with his numerous contributions to the *American Journal of Medical Science*, on ovarian disease, is full of interest and instruction; and to these articles, together with the publication of his own operations in ovariectomy, we may attribute, in a great degree, the spread of the operation throughout this country.

It would be both difficult and tedious further to particularize operations in this country, however earnestly I may be induced to do so. I may say, however, and I trust with as much truth as pride, that, in the West, the operation of ovariectomy has attained as great, if not a greater degree of success, than in any part of the United States; and in Kentucky, as renowned for her surgery as for her chivalry, we have gone as far "as he who goes farthest."

Those of you who have read the report of Professor Gross on "Kentucky Surgery," must feel proud of the surgery of your State. It has kept pace with the intelligence, the agriculture, and the chivalry of her sons. And whilst the reputation of the intellect and patriotism of her statesmen is world-wide; whilst even along the classic shores of Greece,

"They mingle with their grateful lay,

Bozzaris with the name of Clay,"

you have produced the first and greatest ovariectomist, Dr. Ephraim McDowell; and you have produced the most renowned lithotomist known in any clime, Dr. Benjamin W. Dudley.

DIAGNOSIS. "Ah! there's the rub." And when I approach the examination of a case in which a proper diagnosis is sought, I am frequently reminded of that remarkable passage in the Book of Books, "He that thinketh he standeth, take heed lest he fall."

It is said by the historian, Macauley, that a "history of the errors and follies of a nation is essential to the generation which follows." So it is with ovariectomy. Its past history pre-

sents an array of errors and grave deceptions which is, perhaps, without a parallel, in mind or memory. It is said by Mr. Phillips, that the most learned men of Edinburgh examined a case with Mr. Lizars, and after agreeing that it was ovarian tumor, Lizars proceeded to operate, whereupon obesity and flatulence revealed themselves, instead of ovarian tumor.

In a second case of Mr. Lizars, the memorable case of Magdalene Bussy, a case often appealed to by opposers of ovariectomy, to show how long ovarian disease may remain harmless, Mr. Lizars attempted the operation for ovarian tumor, but failed; the wound was closed up and the patient recovered. Twenty-five years after, this patient died of apoplexy. Dr. Simpson was present at the post mortem examination, and in a note to Dr. Tilt, says: "The tumor was pediculated, but fibrinous and uterine, not ovarian." In a letter to Dr. Robert Lee, after the post mortem examination, Mr. Lizars says: "Then, alluding to the time of the operation, every one who examined her, considered the tumor ovarian and free from adhesions."*

In the case of Smith and McDowell, where the patient had tapped herself ninety times, both considered the diagnosis as certain, but on opening the abdomen, no ovarian tumor was found, but a mass of intestines matted together by adhesions.†

Dr. Lyman relates the case of Boinet, where the best surgeons were unable to decide upon a tumor. A consultation was held; among those present were, Roux, Blandin, Robert Montaine, of Lyons, Reamier, Jolybert, Martin, Lolin and others. Opinions were divided between pregnancy, extra uterine pregnancy, foecal accumulations, encysted ovary, collection of blood in the uterus, etc. She was under observation many months, the tumor eventually disappearing after an attack of diarrhoea.

Henry Smith relates a case where an incision eight inches in length was made for the removal of ovarian tumor. Both ovaries were found to be sound, and indurated omentum found to be the cause.‡

Prince relates a case which was pronounced to be ovarian tumor. He operated; tapped the patient; but a few drops of blood escaped; he cut and tore the part with the finger; tent introduced. In a few days the patient died. A post mortem examination was held, whereupon a large pedunculated tumor of the spleen was found, loosely adherent to peritoneum.††

Dr. Philip Buckner, formerly of Kentucky, to whom I am indebted for much of my early information, with reference to the operation of ovariectomy, diagnosed a case as ovarian tumor; "operated by an incision of nine inches;

no ovarian tumor found; but a tumor situated in the mesentery, between the lamina of the peritoneum, and surrounded by small intestines. The operation was proceeded with, the tumors dissected out, and the superior mesenteric artery and other small arteries tied. The patient recovered, and in spite of the great separation of the mesentery from the intestines, no apparent bad consequences of any kind ensued." "This," says Mr. Brown, of Edinburgh, "is the most hazardous feat of operative proceeding I am acquainted with, in which our transatlantic brother has gone ahead."

Mr. Harvey presented a case of much interest to the London Medical Society of supposed ovarian dropsy. Ovariectomy was determined upon, but not performed; and when the patient died, the disease was found to be an hydated cyst, connected with the liver, no ovarian disease whatever existing.‡‡

I have collected many other cases of equal interest bearing upon this point, but those already quoted are "proof stronger than holy writ," that the diagnosis in ovarian disease has been, and still is, most woefully defective. But while I freely acknowledge the enormity of these errors, I am fully convinced that the diagnosis is yet in its infancy, and that many of these errors have and will yield to the increasing energy which is being brought to bear by many of the first men of the profession on this subject.**

It is not alone in ovarian disease that very grave and flagrant errors have been committed by distinguished surgeons. It is said that Sir Astley Cooper and Dr. Highton, of London, in a case of pregnancy, where the quantity of liquor amnii was so enormous as to render fluctuation distinct, appointed a day for the operation of paracentesis. In the mean time, the lady was taken in labor and delivered of a child.†*

Mr. S. G. Goodrich, whose literary labors exceed those of perhaps any one in this country, being the author and editor of one hundred and seventy volumes and the father of the Peter Parley literature, was attacked with what seemed to be disease of the heart. At that period, he was obliged to be carried up stairs, and never ventured alone, being subject to nervous spasms, which threatened sudden suffocation; he went to Europe, and at Paris consulted Baron Larroque and L'Hennin, both eminent specialists in diseases of the heart. They interdicted wine, and required him to live on light vegetable diet. Afterwards, despairing of relief, he returned to London, where he consulted Sir B. C. Brodie.

*London Lancet, vol. 1, 1841.

†Appendix to Cooper's Surgical Dictionary.

‡Philadelphia Medical Examiner, January, 1855.

††American Journal of Medical Science, 1852.

‡‡American Journal of Medical Science, October, 1852.

**Brown, p. 96.

††Brown on Surgery, Diseases of Women, p. 196.

who decided that no organic disease existed, and that the difficulty was nervous irritability, and required him "to feed well on good roast beef," and "to take two generous glasses of wine" with his dinner.

Mr. Abercrombie, of Edinburgh, afterwards confirmed the opinion of Sir Benjamin Brodie.

It is now twenty-five years since this consultation occurred and Mr. Goodrich is still living, having already sold his own writings seven million copies.‡*

"How often," says Dr. Buchanan, "has the operation of lithotomy been performed without finding a stone in the bladder, or, if found, the stone being encysted and not removed, and the operation remaining incomplete." Yet in surgery this is legitimate. In all departments of surgery, as well as of ordinary practice, and in diseases, too, about which the profession have been writing and investigating for hundreds of years, grave and serious errors have been committed. Why not in a disease that is as yet in its infancy as to science?

I might cite you to numerous instances in pregnancy, from the medical jurisprudence of the country, and from obstetricians, where serious and acknowledged errors have been committed. Indeed, I know, in my own history, of a case where two respectable practitioners deliberately examined a lady supposed to be pregnant, and who was then in the sixth month, but who declared that she was not pregnant, and that it was a foul slander upon her character. However, "murder will out," and in the course of time, a son was the result of their grave diagnosis. This same patient was under the treatment of a practitioner for several months, but, with all the poultices and hot fomentations his genius and skill could bring to bear upon the swelling, it would not go down until nine calendar months had duly elapsed.

I might enumerate many instances in the common practice of our profession, where errors in "high places" are daily committed. I will mention one from the memorabilia of my own case book.

Not long since, I was called to see Judge Morris, of Chicago, who was at that time in Kentucky. I found him jaundiced and much emaciated. He had been unwell for many months, had been treated, he said, by the faculty of Chicago, by some for a neuralgic affection of the stomach and liver, and by others for a spasmodic action of the "duct leading from the liver." He was finally advised to travel, but before reaching Cincinnati, on his way to Kentucky, was attacked in the cars. At Cincinnati he was treated by Dr. Taliaferro, who advised him to go to the

Blue Lick Springs. He went there with the hope of clearing up his skin, and was there attacked again. From thence he went to Brookville, at which place I saw him, in consultation with Dr. Corlis. He was then suffering with a severe paroxysm of pain, commencing in the right hypochondriac region, branching off to the shoulder. The pain was increased by motion, and often after a meal, pulse nearly regular; and when these irregular attacks of pain would cease, it was all of a sudden. It goes off like no other pain, with or without inflammation. After I had finished the examination and had a conference with Dr. Corlis, he requested me to give an opinion. I told him he was suffering from gall stones, passing from the liver. "What," said the patient, "a quarry in the liver?" He reminded me that each medical man whom he had consulted had a different opinion, and that he did not know whom or what to believe. I directed the nurse, when the bowels were acted upon again, to thin their contents by pouring on water, and then to pour out the contents of the vessel on a white cloth. On the next morning the nurse handed to the patient two small pebbles or gall stones, one as large as a pea, and the other the size of a grain of wheat. On my next visit I found him cheerful and "ready to render unto Caesar the things which are Caesar's." In a few weeks he went home. Soon after he was confined to the bench for three or four weeks, trying the well known case of Green for the murder of his wife, and was again attacked. I was telegraphed to go and see him, and in connection with his attending physician, advised him to leave the bench. He did so, and since then married near Lexington, Ky., and is, I learn in good health.

A correct diagnosis is the keystone of success in ovariectomy, and the care with which we trace its parts should be the landmarks—the corner trees by which we take distance and move with our compass.

Much of the illiberal opprobrium heaped upon the operation, and on operators in general, has been the result of "itching palms" for professional renown, of unmatured and hasty diagnosis, and of the difficulty inexperienced operators have had to get what information is legitimately in the hands of experienced operators. There is perhaps no disease incident to human flesh which requires so deliberate, close, and patient investigation, as that which relates to ovarian disease. A drop of water falling into a bucket is small in itself, and scarce worthy of note, but in this way the bucket may become full. So it is in the diagnosis of ovarian disease, each symptom, however minute and seemingly of little consequence in itself, if carefully noted and properly weighed as a whole, will generally enable us to arrive at proper conclusions. And

‡*Goodrich's Recollection of a Lifetime, p. 282.

in this rule of action lies one of the secrets of success in ovariectomy. Show me a surgeon who in other operations may have his share of success, but who has a summary way of examining his patients, and of dispatching his operations, and I will show you one who is unsuccessful in ovariectomy.

I am fully sensible of the importance, and the difficulties we encounter in obtaining such information as will guide us in the examination of ovarian diseases. Less has been written about it, in proportion to its importance, than any class of diseases known to the "healing art." I shall therefore attempt, from my own humble experience, and that of others, so to classify the symptoms and means of examination, that "he who runs may read." I may say, however, that you may meet with cases which for the time being may baffle your strongest apprehensions and your most scrutinizing examination. I believe with Dr. Armstrong, "that when we find ourselves in the dark, it is better to stand still until the light returns," than to run the risk of going over a precipice. In other words, it is better prudently to wait for further difficulties by daring to oppose them," and in this age of wonders there is scarcely anything insuperable. I remember to have read of, or seen at some time, a picture representing a party of men, with hats and coats lying by their side, and, with pick-ax in hand, attacking the base of a mountain, whose summit towers far above their heads. We look again, and the steam-horse, as though "the speed of thought were in his limbs," follows their footsteps through the bowels of the earth.

Before commencing the examination of a patient supposed to have ovarian tumor, or dropsy of the ovaries, it is important to have the bowels and bladder emptied. If there is much tenderness or soreness in handling the tumor, it is better to give the patient chloroform, as it will enable you, without pain on her part, to conduct a more complete examination. Prior to this, however, sit quietly down, as if the day was devoted to this particular purpose, and obtain from the patient a complete history of the case. How and when the disease commenced, of how long duration, whether painful or not, in what state the general health, whether the menstrual discharge is regular, does the tumor move from one side to the other in turning, is it, as far as you have observed, movable at all, has it by any course of treatment diminished in size, has it any time been accompanied with swelling of one or both of the lower extremities, etc., etc.

The patient should be placed upon the back, with the extremities flexed, so as to relax the abdominal muscles. Our aim must be, in the examination, to ascertain whether the tumor is ovarian or not, and then its pathological character. In two-thirds of the cases which I

have examined, I have found the tumor to commence in the right or left iliac fossa; and the patient to describe it, when first noticed, to have been as big as a hen's or goose egg. In other instances, it attains to considerable size before it is noticed. I operated on a case last summer, where the tumor attained the weight of twenty-four pounds in thirteen months. The patient did not know upon which side the tumor commenced, and was under the impression that she was merely becoming fleshy, so little was she complaining. In ovarian tumor there is generally but little disturbance of the general health. The stomach, liver, and kidneys generally maintain their usual action. So even with the menstrual discharge, except where both ovaries are diseased.

Dr. Frederick Bird has published a case, where the disease was of sixteen years' standing, and during seven years of that time the menses disappeared, operation, patient recovered.

If fibrous or scirrhus tumors of the ovaria, the menses are oftener irregular than in encysted tumors. Occasionally you will meet with a case, where, in the early part of the disease, the patient suffers with what she supposes to be colic. At such time, if the tumor, or bowels, is firmly pressed upon, the pain may be traced deep down in the right or left iliac fossa. At other times, from active exercise, or exposure to a sudden change of air while exercising, a diffused soreness will be felt over the bowels. A lady, Mrs. Burns, from near Marietta, Ohio, came to Augusta to consult me for the treatment of "dropsy of the bowels." Soon after her arrival, she was attacked with violent pain and great tenderness of the abdomen, so much so, that no pressure could be borne upon the bowels. She was confined to her bed for ten days. I learned from her that such attacks were frequent, and she attributed the present one to the travel in the cars, or from the walk from the boat to the hotel. When the pain and soreness of the bowels had subsided, I made a careful examination of the case, which convinced me that it was ovarian tumor. With the exception of these occasional attacks, her general health is good, and in consequence of this fact, I have not yet operated upon her.

May these attacks not originate from the friction of the tumor against the peritoneum, causing some degree of inflammation to set in? I merely mention this case, and may, by the way mention others, where it will illustrate a fact or corroborate a principle.

As the tumor increases in size, it maintains a rounded outline, and is uniformly dull over the region by percussion, in whatever position the patient may be placed. As it ascends from the pelvic cavity to the abdominal, it

risers in front of the bowels, and in proportion as it extends to the opposite side from which it made its appearance, and spreads out over the bowels, will the dullness be observed by percussion in the same ratio. The intestines lie under or behind the tumor, whilst in ascites they float on top of the liquid, containing, as they always do, more or less gas. In the former we have the dull sound peculiar to ovarian tumor, while in the latter the sound on percussion will be resonant.

The more advanced the disease, and the larger the accumulation of liquid, the thinner and tighter are the walls within which it is confined, and the more distinct the fluctuations. "Even when the quantity is small," says Dr. Watson, "not exceeding a few ounces, a little practice and management will enable you to detect it. Percuss with one finger the most dependent part of the cavity, and apply at the same time a finger of the other hand very near the part struck; and if liquid be there, you will perceive a limited, yet a distinct, fluctuation. In the same way, the presence of liquid in a small cyst may sometimes be ascertained."

The veins of the abdomen are increased in size and number; this, however, is not so marked until the tumor has attained considerable size.

The uni-locular cysts present a uniform surface, whilst the multi-locular have an uneven and irregular surface. In the uni-locular cyst fluctuation is distinct from one side of the abdomen to the other, and generally per vaginam also; whilst in the multi-locular it is distinct only over a particular part of the abdomen, in the immediate part of that particular cyst. I remember to have examined a case where fluctuation could not be felt from one side of the abdomen to the other, but was distinct in a certain space on both sides. It was not perceptible per vaginam, from the fact, as it proved afterwards, that the tumor consisted of three cysts, one occupying the pelvis, and one on either side of the abdomen. In this case, the womb was thrown back upon the rectum, as it often is, and the uterine sound could not be easily introduced until an assistant standing by the side of the patient, placed his hand in front of the tumor and lifted it up with considerable force.

By this maneuver of an assistant if we retain our finger in the vagina, and there are any considerable adhesions to the womb, or the tumor is a part of the womb itself, the womb will sometimes be lifted nearly or quite out of reach of the finger.

When the vagina is elongated and drawn up under the arch of the pelvis, or the uterus thrown back on the rectum, with an assistant stationed as above, we will be better enabled to use the uterine sound, and push the womb from side to side, if there be no adhesions.

When it is remembered that the most fatal adhesions are generally found at the base of the tumors, we can not exercise too much caution in this part of our examination. In the diagnosis of uterine, and non-uterine tumors, I have found the uterine sound, at times, indispensable. And here allow me to describe its use in its inventor, Prof. Simpson's, own language.

"It may be used in one of three ways:

"1st. The uterus may be retained in its situation, with the bougie, and then, by the assistance of the hand above the pubis, or by some fingers in the vagina, the tumor, if unattached to the uterine tissue, may be moved away from the fixed uterus.

"2nd. The tumor being left in its situation, it may be possible to move away the uterus from it to such a degree as to show them to be unconnected.

"Or, 3rd. Instead of keeping the uterus, both may be moved simultaneously; the uterus by the sound, and the tumor by the hand or fingers, to opposite sides of the pelvis, to such an extent as to give still more conclusive evidence of the same fact."

When the tumor is small, by introducing the middle finger into the vagina and the thumb into the rectum, we will be enabled to feel an elastic, egg-like tumor between the rectum and vagina. It is sometimes slightly painful and tender, but again there is no uneasiness manifested to the touch.

Dr. Churehill, in his *Diseases of Women*, says: "If the finger be introduced into the rectum past the tumor, we will find the fundus uteri, and be able to distinguish it from the enlarged ovary. This is very necessary, or we might conclude the case to be retroversion of the womb. In addition, it may perhaps enable us to decide whether one or both ovaries are diseased."

"It should be remembered," says Dr. Brown, "that hernia may descend between the vagina and rectum, and feel like a tumor in that region; but in the absence of symptoms of strangulation, we must distinguish it from ovarian cyst by the effort of coughing and change of posture, and by being unable to pass the finger beyond the tumor."

The pressure of the tumor in the pelvic cavity sometimes gives rise to difficulty in voiding urine, torpidness of the bowels, etc. There are sometimes occasional symptoms of pregnancy, morning sickness, enlargement of the breasts, and sometimes violent pains set in, resembling labor pains. Here the stethoscope is our guide, together with the time which has elapsed since the commencement of the disease. A young lady, upon whom Dr. Dunlap and myself operated, presented some of the above symptoms, and it produced no little commotion in the community among whom she lived.

There is another means of diagnosis and examination to which I invite your careful attention and cultivation. It is the sense of touch, or pressure upon the abdomen, with the ends of the fingers. If we percuss or press firmly, and in quick succession, with the ends of the fingers over an ovarian cyst, there is, at the cessation of percussion, or pressure, an elastic sensation—a rebound to the sentient extremities of the fingers—a resisting or reflecting back of the fingers, in the distended cyst; whilst in ascites there is not the same elastic response to the finger. In fibrous tumors and enlargement of the spleen, there is a doughy, fleshy sensation to the fingers, which is more easily felt by the practiced finger than described. This means of diagnosis requires practice of the fingers, as it does to distinguish the different shades of the pulse. Of this diagnostic sign, Dr. Watson says:

"If you press suddenly with the tips of the fingers in a direction perpendicular to the surface, a sensation which it is difficult to describe in words, yet which is quite decisive, and not to be mistaken, a sensation of the displacement of liquid and of the impinging of your fingers upon some solid substance below."

The same writer further states, in reference to the senses:

"You will find what previous to positive trial you might not suspect, that the senses, the eye, the ear, the touch, however sharp or delicate they may naturally be, require a special course of training and education, before their evidence can be trusted in the investigation of disease."

Dr. Latham says, (I quote from Bennett,) with equal truth, that the "knowledge of the senses is the best knowledge, but the delusions of the senses are the worst delusions."

Swelling of the lower extremities we sometimes meet with, both in early and later stages of the disease. This originates from the pressure of the tumor upon the vessels which return the blood to the heart. See case of Mrs. Williams, of Indiana, and Mrs. Martin, of Maysville, Ky. In the latter case, ascites, swelling of the limbs, and ovarian tumor co-exist.

When we have diagnosed the disease as ovarian tumor, next in importance is the extent of adhesions and the prospect of its removal. Perhaps the guide of no author is better, or the experience of any individual more to be relied upon, than that of Mr. Brown, of Edinburgh, in his tests for adhesions. After placing the patient on the back, with the extremities flexed, so as to relax the abdominal parietes, he directs the cyst to be moved from side to side. If this were readily done, he knew that there were no adhesions. He then pressed firmly over the relaxed parietes, and moved them over the cyst; if they were read-

ily moved, he knew there were no adhesions on the upper and lateral surfaces of the cyst. He then grasps and puckers up the parietes, and moves them over the cyst, and saw if they were gathered up readily, without raising the cyst itself. He then requires the patient to take a full inspiration, and if there be no adhesions to the extent of an inch, the place previously occupied by the tumor being taken up by the intestines, a dull sound over that region is elicited by percussion during ordinary respiration; but when the patient takes a deep inspiration, an intestinal resonance is there perceptible.

"Freedom of motion in the tumor," says Dr. Lyman "though not altogether decisive, is indicative of the absence of adhesions." It is now one of the fixed facts, that the most dangerous and insuperable adhesions are generally found at the base of the tumor, and found, too, when the tumor is easily moved from side to side. The case of Dieffenbach, Berlin, is in point. Here the tumor was movable in every direction, and partly on its own axis even; the operation was commenced, but abandoned, on account of the difficult adhesions to the vertebral column. The patient, after much difficulty, recovered.

We might, also, refer to the case of Page, where the tumor was movable, operation commenced, cyst evacuated and drawn partly out, when it was found adherent to the "surrounding parts about the pedicle, and to several inches of intestines." The operation was abandoned, and the patient died.

If I can satisfy myself, and I generally can by the uterine sound and by other means, that the adhesions at the base of the tumor are not insuperable, the immovability of the upper portion would not always deter me from operating. See the case of Dr. Dunlap and myself, Mrs. Lastley, Portsmouth, Ohio. Twelve months before Dr. Dunlap and I performed the operation, Dr. Kimbrough, of Lowell, Massachusetts, attempted the operation and opened the abdomen; but finding, as he did, a mass of adhesions at the superior part of the tumor, abandoned the operation and closed up the wound. In this case, the upper part of the tumor was immovable, but, after a careful and diligent examination by both of us, we decided that the adhesions at the base of the tumor, if any at all, were very slight. The case was successful, but required the application of twelve ligatures to the superior adhesions, which were principally peritoneal. It gives me much pleasure to state that this accomplished lady is now, nearly a year after the operation, in good health.

In another case of Dr. Dunlap's and mine, Mrs. Kamsey, of Winchester, Ohio, operation performed November 15, 1855, a large multilocular tumor, weighing sixty pounds after its

removal, so completely filled up the abdomen and packed itself into the pelvis, that it was impossible to ascertain the extent of the adhesions. Fluctuation, however, was distinct in each cyst, and after discharging their contents, we came upon one of several adhesions near the pedicle, which was attached to the peritoneum with a tapering neck, as it neared the tumor, so much so, that a shoulder, or button-like piece, was dissected out of the tumor to prevent the ligature from slipping off. The case did well, and the patient is now in good health.

A further test of Dr. Frederic Bird for superior adhesions, I have found to be a valuable one, namely, by putting the abdominal muscles in action, and noticing whether they rise much from the surface of the tumor. Thus if the patient, while lying on her back, be told to raise herself up in bed without using her arms, the recti-muscles will start up into a prominent band, if their sheath is not tied down by adhesions on its peritoneal surface, but not if it is tied down.

Dr. Washington Atlee, in an article published in the *American Medical Journal*, places considerable reliance on the pulsation of the tumor itself, or the "aortic impulse as being more manifest in solid or encysted growths than in cases of ascites.

Before I leave this part of our diagnosis, I wish to say an additional word in reference to percussion. Among those who are expert in their perception of ovarian tumors, and they are few and far between, perhaps as much, if not more importance is attached to the use of percussion than to any other symptom or set of symptoms. We have, over the umbilical region, in ovarian tumor, in whatsoever position you place the patient, a dull sound on percussion; whilst in one or both of the flanks we have the resonance peculiar to the intestines. This diagnostic evidence is, perhaps, ninety-nine times in a hundred, correct in reference to tumors. Dr. Watson, however, gives us an anomalous case, which is a rare illustration as an exception. "The history of the case was the history of ovarian tumor;" yet, continues he, "the umbilical region, when percussed, always rendered a hollow sound." Upon the death of the patient the mystery was solved: air hissed forth from the opening made by the scalpel through the abdominal parietes, and an ovarian cyst of considerable magnitude was found adhering to the peritoneum in front of the belly, and containing no liquid, but some yellowish shreds only. This ovarian bag had been filled with air, which had given rise to the equivocal sounds. The air, it is supposed by the author, was formed from the decomposition of a degenerated cyst within.

I have alluded to the examination *per vaginam et per rectum* but perhaps not so

specifically as its merits demands. You will often be enabled by the finger to detect fluctuation in a cyst, and as frequently to detect a fibrous tumor of the ovaria from a uterine one.

Allow me to cite a case: Miss Strader, formerly of Mason, Ohio, but then of Cincinnati, came to Augusta to consult me about the propriety of an operation for what her physicians pronounced ovarian tumor. On examination I found the tumor occupying the central and right side of the abdomen. It was easily moved in any direction without any apparent pain. There was no fluctuation, and the ease with which the tumor could be lifted out and turned from side to side, made, for the moment, an impression on my mind that although perhaps fibrous, with a narrow pedicle, it would justify an operation. But remembering my motto, which heads this article on diagnosis, "He that thinketh he standeth, take heed lest he fall," I proceeded to other tests. On introducing the finger into the vagina, I found it completely filled up with an obtuse lobe of the tumor, dipping deep down into the pelvis. At first I thought it might be retroversion of the womb, but by a rectal examination, I found a smaller lobe pressing upon the rectum, which seemed to sprout off from the lobe in the vagina in a perpendicular direction. I came to the conclusion that it was an *intra-mural* tumor of the uterus, forming in the walls, and extending both upward and inward. The patient returned home, but came back a second time, insisting still upon an operation. I wrote a note to Dr. Dunlap, who came and examined the case with me. He formed a similar conclusion to the one I have just expressed. Miss Strader was subsequently examined by Profs. Marshall and Bayless, of Cincinnati, and since then by Dr. Washington Atlee, of Philadelphia, as will be seen from the following note:

Philadelphia, Nov. 9, 1854.

"Dear Sir:

Your patient, Miss Strader, presented herself to me to-day, and, upon examination, I have arrived at the same conclusion you did—that is, a fibrous tumor of the uterus. The uterus, however, can not be clearly diagnosed, and consequently as the relation of the tumor with it can not be defined, no operation ought to be recommended.

Yours, truly,

WASHINGTON ATLEE,

418 Arch Street.

J. Taylor Bradford, M. D.

ASCITES AND OVARIAN TUMOR.

The distinguishing characteristics of ascites as compared with ovarian tumor are important. It is not always an easy matter to distin-

guish between the two, and it has once occurred to me to encounter more difficulty in deciding between ascites and ovarian tumor, than it was to establish a correct diagnosis between uterine and ovarian disease.

In the maturity of both diseases, when the abdomen is distended to its utmost, many of the symptoms which assist and guide us in the early stages, are lost. The ovarian cyst then loses its circumscribed and lateral preponderance, and accommodates its growth to the inequalities and recesses of the abdominal cavity.

In the earlier stages of ascites, we generally find an equable enlargement of the abdomen on both sides, whilst in ovarian tumor the swelling is circumscribed, and confined mostly to one or the other side. In ascites there is more constant and uninterrupted tenderness of the peritoneum, by pressing firmly and quickly with the ends of the fingers, whilst in ovarian tumor it is only occasionally the case. In ascites the general health is sooner and more seriously disturbed, whereas in ovarian tumor it often remains good for months, or even years. In ascites the secretion from the kidneys is usually scant and defective, whereas in ovarian tumor, except in the rapidly enlarging cases, there is but little change. In ascites we find the patient oftener with a dry skin, thirst, and a more frequent and irregular pulse, whereas in ovarian tumor they are only occasionally if at all, present. In ascites we can generally trace the cause of the distension to some cardiac, renal, hepatic, or other organic affection, whereas in ovarian tumor, if of long duration, the mystery is how the patient carries twenty, thirty, forty, or even sixty pounds, without constant complaining. In ascites the bowels, always containing more or less gas, float to the surface of the fluid, whilst in ovarian tumor they lie behind or underneath the tumor. We have, then, on percussion, in ascites, whatever position the patient assumes, the resonant or hollow sound peculiar to the intestines, which remain uppermost, with corresponding dullness below. In ovarian tumor we have the dull sound over the region of the umbilical or latero-umbilical and latero-pubic, in whatever position the patient may take; or, as Mr. Brown more strikingly describes it, "want of resonance in the lowest part, in all positions, with tympanitic sound in the highest, in all positions, indicates ascites."

To these characteristics, usually considered so important, Dr. Watson has given us some anomalous and interesting exceptions. In one case the distension in ascites was so great that the mesentery was not broad enough to allow the buoyant intestines to reach the surface, when the patient was supine. In this case,

then, instead of the resonance peculiar to the intestines, it gave a muffled or dull sound.

The second case was found, upon post mortem examination, to be ascites, where the "omentum had formed into a thick cake," and was "strapped tightly over the subjacent intestines." Here, of course, we would have a dull sound, although ascites existed.

He alludes to another possible contingency, in which the sounds by percussion would be equally deceptive. This may occur in consequence of the "adhesion of the various coils of intestine to each other, and the parts behind them." Such cases, however, fortunately for the diagnosis of ascites, are very rare, and I do not know a single author, save that rare teacher and profound thinker, Dr. Watson, who has met with them.

I have now a patient, Mrs. Kenyon, opposite Vanceburg, Kentucky, whose abdomen is very much distended, and the history of whose disease is purely ovarian. It has been of nearly three years' standing. The general habit it but very little disturbed, and the sound elicited by percussion over the entire abdomen is resonant, except occasionally, when, just below the umbilicus, a thickening of the parietes, or what feels more like the "omentum cake," takes place, over which a dull sound will be elicited until it subsides, which it generally does in two or three weeks. The usual and general approved remedies for ascites have not decreased the size of the abdomen. It is clearly, in my mind, not ovarian, but ascites; but to what may it be attributed?*

When, in either ascites or ovarian tumor, the quantity of liquid is small, fluctuation by the usual mode is not always distinct. In such cases, we will find the mode of Mr. Tarral, as detailed by Professor Wood, worthy of use. It consists in applying the thumb and middle finger of the same hand upon the surface, and percussing with the index finger between them.

The test, already alluded to, of Dr. Bird, of London, with reference to adhesions in ovarian tumor, I have found to be one among the most convincing tests in ascites: and I do not now recollect any writer who has alluded to it as one of the tests in that disease. That is, if the patient, whilst lying upon her bed, be directed to raise herself up in bed without using her arms, the fluid will bulge up prominently between, and laterally to, the recti muscles, whilst in ovarian tumor, on account of the circumscribed sac, it will not admit of such a degree of prominence. The parietes of the abdomen will admit of considerable extension, whereas the sac and the recti muscles

*I have tapped this lady twice, and with the application of a light bandage after the second tapping, she has entirely recovered.

will not admit of the same marked protuberance and inequality.

It sometimes happens that ovarian tumor and ascites exist together. I have met with one remarkable case of this kind, Mrs. Martin, of Maysville, Kentucky. By pressing firmly with the ends of the fingers, the ascitic fluid was readily displaced, and a tumor of the left ovary found floating in the surrounding liquid. The patient was sixty years old, and the disease had progressed so far, and the general health so much declined, that I did not advise or solicit an operation. She lived but a few weeks after I saw her, and no post mortem examination was obtained. In response to a circular addressed to the physicians of Kentucky by myself, I received from Dr. Dimmit, of Lewisburg, an intelligent and promising physician of that place, and whose patient she had been up to the time of her removal to Maysville, the following history of the case:

"I saw her for the first time three years ago, at which time the tumor, occupying the left side, was firm, movable, and dropsical. The disease appeared subsequent to the cessation of the catamenia. Her general health at that time was moderately good. She suffered at times extreme pain in the region of the tumor, at which time a nervous train of symptoms, resembling hysteria, set in."

I saw Mrs. Martin in one of the nervous attacks alluded to by Dr. Dimmit. She would lie for a time motionless and apparently lifeless, but would retain her consciousness throughout the paroxysm. The attacks were superinduced by pain, fright, or excitement of any kind. I merely quote this case to illustrate how unlike different persons may be affected by the same disease, and that ovarian tumor is not without its collaterals and concomitants in the nervous system.

It may appear to you that I have dwelt unreasonably long upon the diagnosis of this "hydra of calamities," and the cases cited by way of illustration may, for the time being, appear irrelevant, but these cases and these symptoms and tests, may one day meet you at the bedside.

DISEASES LIABLE TO BE MISTAKEN FOR OVARIAN DROPSY.

Dr. Brown, in his excellent work on "Surgical Diseases of Women," classes these diseases as follows:

1. Retroversion and retroflexion of the uterus;
2. Tumors of the uterus—*a.* solid, *b.* fibrocystic;
3. Ascites;
4. Pregnancy;
5. Pregnancy, complicated with ovarian dropsy;

6. Cystic tumors of the abdomen;
7. Distended bladder;
8. Accumulation of gas in the intestines;
9. Accumulation of feces in the intestines;
10. Enlargement of the liver, spleen, or kidneys, or tumor connected with these viscera;
11. Recto-vaginal hernia, and displacement of the ovary;
12. Pelvic abscess;
13. Retention of the menstrual fluid from imperforate hymen;
14. Hydrometra.

A description of these different diseases, under their particular class in the different medical works, will generally enable you, if not possessed of the "tumor mania," to distinguish them from ovarian dropsy. I shall only allude to a few of them in which I may have had some personal experience.

From what I have read and observed, I am inclined to the belief that malignant disease of the ovary is very rare. I have met with but one case. This was a patient of Dr. Duke's, of Maysville, the wife of the Rev. M. Upon examination I found a large, uneven, but solid tumor, occupying the left side, and extending up to the umbilicus. It was particularly firm, with numerous obtuse lobes projecting upward; rather tender to the touch, and so completely adherent to the surrounding parts, particularly to the womb, that but little if any movement could be effected. An examination per vaginam revealed the same hardened and uneven surface. The pain and suffering were very great, general health bad, and that peculiar cast of countenance which indicates a system worn down by malignant disease. Soon after I saw her, I learned from Dr. Duke that the tumor had grown so rapidly, and infringed so seriously upon the bladder, that it was almost impossible to pass the catheter, which for some time, had been the only means of passing urine. No post mortem examination was obtained.

When we add to the above symptoms that in cancerous growths, the tumor is uneven in its growth, the pain and soreness much greater than in other forms of disease, the general cachectic, and sallow complexion, the peculiar hardness and rapidity of its growth, the general health and strength soon wasted, we will have but little difficulty in determining its nature.

I have already directed your attention to the case of Prince, where a patient was operated on for ovarian dropsy, which proved, upon post mortem examination, to be a tumor of the spleen.

I was once consulted in a case, Mrs. —, of Boone County, Kentucky, which a number of physicians had pronounced ovarian. She

came to Augusta. I found, upon examination, the abdomen enormously distended, the tumor reaching from the pubis to the ensiform cartilage, and occupying almost the entire side. Upon pressure, a hard or doughy feel was imparted to the finger. There was no fluctuation manifest, and a dull sound was elicited upon percussion throughout the abdomen, except the right hypogastric region. The tumor was movable, and upon dipping the finger deep down between the pubis and the tumor, a "cactus-like" lobe of the tumor was felt, which could be slightly raised without an apparent pain. The symptoms generally were obscure. She complained but little except from the weight, which could not be less than twenty pounds. Examination per vaginam revealed no sign of a tumor in the pelvic cavity. But little was known about the history of the case with the exception of patient's avowal that it commenced on the "left side, immediately under the ribs," and was of two years' standing. The "cactus" or notched-like feel of the tumor, together with the condition of the pelvic organs, and the history of the case, led me to the conclusion that it was not ovarian disease, but enlargement of the spleen hypertrophy. I have since understood that the family have moved West, and have lost the history of the case.

I saw another well-marked case of diseased spleen in the daughter of Mr. —, of Nicholas County, which had been diagnosed as ovarian tumor.

OVARIAN TUMOR—PREGNANCY CO-EXISTING.

In the Transactions of the American Medical Association, 1851, Atlee's tables, is a case of Dr. Atlee's, where the patient was two months pregnant at the time of operation. No miscarriage. Tumor weighed eighty-one pounds. Died of starvation.

In the Medico-Chirurgical Transactions, vol. 30, is a case of Dr. Bird, where there was no sign of pregnancy; operation performed; weight of tumor fifty pounds; abortion second day; recovered, and had a child subsequently.

ACCUMULATION OF FECES IN THE BOWELS.

In Prof. Gross' Pathological Anatomy, a remarkable case is related, as occurring in the practice of Dr. Lean, of Columbia, South Carolina. It occurred in a young lady aged twenty-five years. No alvine evacuation had been had for nine weeks. Upon a post mortem examination the intestines were found enormously distended; colon, duodenum and ileum measuring thirteen and one-half inches in circumference the quantity of fecal matter amounted to nearly seven gallons.

Mr. Brandle relates a case where the fecal

accumulation impacted in the colon amounted to thirty-three pounds.

Mr. Brown says: "I once saw a case of simple encysted ovarian dropsy, which, in its earliest stage, was considered by a very distinguished surgeon, in London, to be accumulation of feces."

I mention these cases that you may be on your guard and not mistake, as some prominent English surgeons have done, fecal accumulation for ovarian tumor.

In 1854, whilst attending the State Medical Society in Covington, Ky., I visited, with Dr. Chambers, a patient of his laboring under disease of the omentum. The abdomen was considerably enlarged, with some degree of ascites, but by displacing the liquid by percussing firmly with the ends of his fingers, that peculiar knotted or rigid feel which characterizes enlargement of the omentum was manifest. The history of the case, the point at which it first made its appearance, together with that ridged or serrated feel of transverse lines, with more pain and tenderness than is usually the case with ovarian tumor, enabled me to decide in my own mind that the disease was omental and malignant.

I have seen one case of this since, a patient of Dr. Adamson, of Maysville, Kentucky. The disease in this case presented the above characteristics, except that it was more uneven in surface, lumpy and knotty, with all the leading indications of true malignancy. No post mortem examination was obtained.

LETTERS FROM SURGEONS AND OPERATORS.

The following letters, which I trust will prove of much interest on this subject, have fallen into my hands in answer to inquiries in search of statistics on ovariectomy.

Philadelphia, Jan. 24, 1854.

MY DEAR SIR:

Your interesting letter came to hand last month, but has not been replied to, in consequence of my numerous and various engagements, and depression of spirits from domestic affliction. I regret that I shall not be able to render you much assistance in the investigation you are engaged in.

Some years ago I took a lively interest in the subject, from having carefully examined Dr. Bird's preparations in London, and from having read Clay's and other's works sent me by their authors. Being, however, rather out of the line of my studies and practice, I have not recently turned my attention to the subject—not enough, certainly, to justify my offering any decided sentiments in relation to it, especially as I have never performed or witnessed the operation. The books, more-

over, referred to, I forwarded some years since to Dr. John L. Atlee, of Lancaster.

In conversing a few days since with that distinguished gentleman, I took the liberty to show him your letter and to ask him for statistics. He referred me at once to his brother's, Dr. Washington Atlee, writings, which embodied everything known, he remarked, upon the subject, including Dr. Lee's statistics. These I will get and send you without delay.

I will only add that I have no prejudice to contend with in the matter. My feelings, I confess, are in favor of the operation in proper cases; and I would not hesitate to perform it if called upon, after due study and preparation, for I have a strong conviction, derived from my two successful cases of Cesarean section, saving both mother and child, that little danger is to be apprehended from opening the abdomen, provided the peritoneum be carefully handled, and ordinary skill and prudence be exercised in the operation.

The views thus given I do not consider worth making known. I have no objection, nevertheless, if you think my authority in collateral matters of any weight, that my name be used in accordance with the remarks above stated.

The case you are about to publish is certainly a very interesting one, and I shall take great pleasure in reading it.

With great respect, I am yours,

W. GIBSON.

Philadelphia, March 27, 1859.

MY DEAR SIR:

Your letter was received last month, and would have had an earlier reply, but it came to hand in the midst of building and moving. My papers even yet have not been arranged so as to enable me to give you a satisfactory answer, although I have a large mass of materials, which would go a great way toward establishing gastrotomy in the minds of the profession; I mean those members of the profession who are influenced more by facts and truths in surgery than by opinions and prejudices.

My professional engagements are so pressing at present that I can not pretend to analyze the matter in my possession for your use. I will, however, send you several pamphlets, among them my table of cases which will give you all the facts on record up to date of publication. I may say, in reference to the operations occurring since the publication of my table, that the success of the operation is certainly not less than there represented. This ought to make it as justifiable and legitimate as any other capital operation in the catalogue of surgery. Indeed, I consider the

arguments employed against it by the opposers of gastrotomy equally as applicable to many other operations long since established.

My own cases now amount to twenty-three. These may be divided into two classes:

First. Those where death was impending, and daily looked for; and.

Second. Those in a more favorable condition.

In the first class were ten cases, and four lives were saved by the operation. The death of the other six was supposed not to have been hastened by it, while the comfort of all the patients was improved, and in some of the cases life was thought to have been prolonged. In none of these could death be attributed so much to the operation as to the disease. Among the recoveries, one patient was sixty nine years old, tumor twenty-eight pounds; another was fifty-six years of age, tumor fifty pounds; another was pregnant and the tumor was heavier than the patient; while the fourth was bloodless from flooding after miscarriage, with a small, thread-like pulse, 130 per minute. These cases, I believe, were snatched from the grave by the operations.

In the second class are thirteen cases, nine recoveries, four deaths, very nearly the same proportion as in Clay's operations.

I congratulate you and Dr. Dunlap on the success of your operations, and would be pleased to have a report of each case, as well as all other information which you can furnish me on this and similar subjects.

Please accept a copy of my prize essay, which I also forward to your address. I have operated on six cases since its publication.

Very respectfully yours,

WASHINGTON ATLEE.

Manchester, England, Dec. 15, 1856.

MY DEAR SIR:

I have just received your kind note, dated November 23, 1856, and have to thank you for the many kindnesses therein expressed. When I wrote last to you I was busy preparing a small volume entitled "Hand-Book of Obstetric Operative Surgery" for the press, intending to follow it up by a larger work on ovariectomy, stating my experience in full. With great difficulty I found time to complete my Hand-Book, which I hope by this time you have seen, in which you will find a long chapter devoted to ovariectomy. But I need scarcely tell you, my increasing professional engagements interfere so seriously with my time, that I can scarcely attend to any thing that I am not really compelled to: otherwise, I have abundant material to communicate to the world, which I imagine would be desirable.

I am delighted to hear of your great suc-

cess, far exceeding even my own; indeed, I almost envy you and Dr. Dunlap, and earnestly hope for its continuance. I have not yet given up my intention of publishing my ovarian work. It is only waiting time, not inclination, to complete. In the meantime, I can only add a few particulars to my last statement of cases, which now amount to seventy-six, and may be read thus:

Of first 20, 8 died—13 recovered;

Of second 20, 6 died—14 recovered;

Of the last 36, 9 died—27 recovered.

I believe this is the legitimate mode of viewing the question, progressively, by which the mortality is shown to be gradually lessened by practical experience thus:

First cases, 1 death in $21\frac{1}{2}$;

Second cases, 1 death in $31\frac{1}{2}$;

Last cases, 1 death in 4.

I should like you to refer to my new Hand-Book for such practical hints as I have, from time to time, elicited by practice, and I will write to my publisher to forward you a copy.

I am entirely of your opinion, that the cases require great care in selecting, and should not be operated upon merely because they are ovarian.

I have little to say as to the want of credence in those who take ground against the operation. I can, however, with pride and pleasure refer them to many men of the highest standing in my own country, amongst them Prof. Simpson, Dr. Bennett, of Edinburgh, Dr. R. Lee, Safford Lee, and a list of hundreds who have communicated with me on the subject, as to my veracity, not forgetting Professors Lee, Z. Channing, with Dr. Atlee, in your own land.

The opposition in England to the operation is fast giving way, and I trust it may be said, that in legitimate cases there are few surgeons here who oppose it. I can not at present do more than give you this short resume.

I have some few cases under my care on which I expect very shortly to operate, and I trust I shall be as successful as I have been, if not more so.

With kind regards and best wishes for your continued success, I am, my dear sir,

Yours, most sincerely,

CHARLES CLAY, M. D.

Dr. J. Taylor Bradford, Surgeon, Augusta, Ky., U. S.

I regret to say that I have not received the "Hand-Book" alluded to in the above letter of Mr. Clay.

DEAR SIR:

In reply to your letter of the 24th ult., I have to say that I regard ovariectomy as fairly within the precincts of regular surgery.

Ohio, it should seem, holds a prominent rank in the operation. Very respectfully,

R. D. MUSSEY.

Cincinnati, Jan. 1, 1857.

Extract from a letter to me by Dr. Blackman, Cincinnati, Jan. 2, 1857:

"If you see the *Western Lancet*, you are probably already aware that I regard ovariectomy as a justifiable operation in suitable cases. I would not operate in a case of encephaloid disease of the ovary; and I would not persevere in an operation already commenced, should I find very extensive adhesions, for I have seen a patient, from the breaking up or rather dividing with the knife such adhesions, die on the table. I saw such a case occur to Dr. ——. I was one of his assistants."

Truly yours,

GEORGE C. BLACKMAN.

DR. BRADFORD:

I have received yours asking for the results of my observation upon the operation for ovarian tumors. Upon this subject it is not in my power to say anything from my own experience in favor of the operation.

Many cases in the early stages of enlargement have been under my care, within medical treatment removed the enlargement, and restored the health of the patients, while others of protracted existence, of malignant growth, or of complex organization, attended by great enlargement, have offered me no evidence in favor of an operation. It is proper, however, to observe that in reference to these, my observations have been limited, as you will infer on being advised, that in a practice of five and forty years, embodying every variety of surgical practice, I have operated upon one case only. The tumor appeared to occupy the entire abdominal cavity, and was organized throughout. The patient died on the fourth or fifth day after the operation, and possibly might have recovered under the advantages of good nursing, directed by professional skill, neither of which were at command.

With great regard, very truly your friend,

BENJAMIN W. DUDLEY.

Dr. J. T. Bradford, Augusta, Ky.

Lexington, Jan. 4, 1857.

Louisville, January 17, 1857.

I feel that I owe you an apology for so long delaying to answer your letter of the 24th of December last. The fact is, that I have been reluctant to write on the subject to which your letter relates, because I have scarcely formed any very decided opinion on many points connected with it.

Of the propriety and necessity of ovari-

omy in certain cases, I have no doubt; but to confine the cases with precision, for the guidance of those who may be debating the matter in their minds, and need to be helped to a proper decision, is, I apprehend, a difficult task. It is, I think, perfectly clear that no patient with a diseased ovary, who does not suffer much inconvenience from her malady, and is yet capable of enjoying life and contributing to the happiness of others, ought to be advised to the risk of so dangerous an operation. But, on the other hand, if the operation be deferred until life itself is a burden, the chances of its successful performance are greatly diminished, and to decide exactly how heavily this burden must press before we shall be justified in resorting to the knife, is a very nice point, and one the decision of which involves, of course, much responsibility.

Probably future and more extended experience may clear up the obscurity that now perplexes this view, and dissipate or at least diminish other difficulties that embarrass the whole subject. At present, while I entertain the opinion that under certain circumstances the extirpation of diseased ovaria is a justifiable operation, I should feel at some loss were I called upon to decide the conditions, though I might be able to apprehend them in practice.

My own personal experience in ovariectomy is very limited, being confined to three cases. In one of these, operated upon by Dr. Dudley, many years ago, the patient survived the removal of the tumor only a few days. The second occurred in the practice of Dr. Gross, and was likewise followed by fatal termination. The third was my own case, which had a more fortunate result, the patient entirely recovering. I say fortunate, for I do not ascribe the issue to my superior skill, but purely to luck.

I might have performed the operation several times since, but I confess I have not any decided wish to repeat it, but have rather been disposed to evade it, or, as we sometimes say, dodge it.

Do not, I pray you, think me a surgical poltroon on account of this confession, but attribute my hesitation rather to the want of clear and satisfactory perception of the line of surgical duty.

Hoping that your report may enlighten me, and be alike creditable to yourself and the society,

I remain, my dear sir, your friend,

HENRY MILLER.

New Orleans, March 30, 1857.

MY DEAR SIR:

Excuse me for not replying to yours of the 7th of February sooner, asking my views on the propriety of ovariectomy. Pressing business at the time it was received compelled me to lay it by, and the subject passed from my

mind until now. You are perhaps aware that I am the advocate of a new method of curing ovarian dropsy, which obviates the pain and danger of ovariectomy fully as much as Civiale's method of removing stone from the bladder obviates the pain and danger of lithotomy.

But as Civiale's invention is not applicable to all cases, neither is my method, practiced with success in one case, of treating ovarian encysted tumors, by reaching them through the Fallopian tubes, practical in all cases. Perhaps it is applicable in only a very few. You might naturally expect me to be among those who are disposed to magnify the dangers attending excision, to attract the greater attention to the discovery of a method of cure void of either pain or danger. But I am not among them. I am in favor of the McDowell operation when it offers the only chance of saving the life of the patient. I call it the McDowell operation, because he was the first surgeon to perform it with success for encysted abdominal tumors requiring for their extirpation the whole abdominal parietes to be laid open from the sternum to the pubis. The tumor removed by Dr. McDowell, of Danville, Ky., from Mrs. Crawford, weighed fifteen pounds, and the cure was complete in about a month. The operation was performed in the year 1809, yet in 1826, the fact that such an operation had been performed with success by a physician in an obscure village in Kentucky, was not fully believed either in New York or London, although McDowell, as also the two Smiths, Nathan and Alban, had, in the meantime, performed a number of operations of the kind with success. The London medical journals sneeringly noticed McDowell's cases, which Mr. Lizar had appended to his work on ovarian disease, published in 1825. A New York physician in a monograph on the same subject, published in the *Medical Recorder* of Philadelphia, vol. x, p. 262-269, 1826, noticed these sneers of the London editors, and expressed a "hope," italicizing the word, "to see Dr. McDowell come out well in the affair, and make good his claims." —267. The editor of the *Medical Recorder*, Dr. Calhoun, at the conclusion of the article, assured his readers that there was no doubt in regard to the cases reported by McDowell, as he had been assured of their truth by communications of the most respectable character from Kentucky. But because some cockney editors of London chose to sneer at McDowell's cases of successful ovariectomy fifteen or sixteen years after they had been reported and duly authenticated, the New York physician seemed to think it was incumbent on McDowell to make good his claims, which he had already made good so far back as 1809, when he cured Mrs. Crawford, by an operation requiring an incision from stern-

um to pubis through the walls of the abdomen.

So long did it take truth to travel from Kentucky to New York, and so strong were London sneers against it when it got there, that Mrs. Hunt, a patient of three New York physicians, was permitted to die a miserable death without getting the benefit of that truth, her physicians looking on and giving their assent for her to suffer and die without surgical aid, with a disease which McDowell had proved to be a remediable ailment by his success with Mrs. Crawford and others. The London editor's sneers were too strong for the Kentucky editor's facts with the New York physicians, and they let her die without attempting ovariectomy to save her. On examination after death, they found no adhesions of any consequence, and "posteriorly," to use their own words, "the attachments easily yielded to the fingers, and we rolled out a huge mass almost without the aid of the knife." "Its attachment to the body was by two pedicles, not larger than a finger, on the original sight of the ovary." See *Medical Recorder*, vol. x, p. 265.

At a later period in the year 1828, Dr. Foreman, of New Jersey, reported a case, in the *Medical Recorder*, vol. xiv, pp 366 and 377, of ovarian dropsy, which he tapped a number of times, drawing off, at different times, upwards of twenty gallons of dark colored, viscid humor, and which, after five months suffering, terminated fatally. On examination after death, "the position of the tumor in the abdomen was found to be anterior to all the viscera, and its adhesions to them was so slight as to require the scissors in one place only to free it, when it rolled out a huge fluctuating mass upon the table." p. 369.

In reporting the case, Dr. Foreman, seeing how slight the adhesions were, very correctly concludes, "that in encysted dropsies, unless the containing sack can be entirely removed from the body, or destroyed by suppuration, there is very little ground to hope that they ever can be cured by art. Therefore, when the ovary is the seat of the disease, we are warranted by the successful results of the few operations of the kind that have been performed, in laying open the cavity of the abdomen and removing the diseased organ from it at once. If this course had been pursued toward my patient she might at this time have been living. These organs have been removed sufficiently often, without dangerous symptoms intervening, to fully justify the operation in all cases where the general health of the patient is good, and the diagnosis clear. The appalling exposure of the viscera in this operation, should, I admit, deter from its performance, were death not inevitably ninety-nine times in a hundred without it." "Un-

fortunately the dread of attempting to do good for fear that evil may grow out of it, paralyzes the hands of surgeons, and satisfies them to sanction inevitable death rather than incur the possible dangers of a timely operation. The time, however, has come when these degrading apprehensions are giving way." etc., p. 361.

I could not express my views on this interesting subject more clearly than Dr. Foreman has expressed them for me in the above quotation, and I beg you to receive the same as my answer to the important question, in regard to the propriety of the operation of ovariectomy, that you propounded to me. Those who are disposed to blame the New York physicians for letting the sneers of London editors paralyze their hands, so far as to sanction the inevitable death of Mrs. Hunt, rather than give her a chance for her life by resorting to ovariectomy in her case, should not hold the physicians of the present day blameless, who condemn the operation under all circumstances, for no better reason than that some flippant European writers and lecturers have condemned it without making themselves acquainted with the facts contributed by American surgeons.

Fifteen or twenty years after ovariectomy had been successfully performed in a number of cases in Kentucky and other parts of the United States, doubt and suspicion were cast upon them by European writers, and now, after the facts called in question have been proved beyond cavil or dispute, they are very much inclined to ignore them entirely, and to treat the subject as if no such operation had ever been successfully performed in America. Thus Watson, in his fourth lecture, speaking of ovariectomy, says: "The results of experience have been so discouraging, as well nigh, in most minds, to prohibit such attempts in future." Watson had evidently not informed himself in regard to the facts, or designedly ignored Dr. McDowell's and other American surgeons successful operations. It does not follow that because the operation has been unsuccessful among the pauper and lazzaroni classes in the European hospitals, that well fed Americans, surrounded with all the comforts of life and who stand operations much better than European hospital patients, should be deprived of the chance it gives them for their lives. Both in surgery and in the practice of medicine, it is high time for America to set up for herself, and to be governed by her own experience and observation, and not by the experience and observation of Europe, drawn mostly from hospital practice. It is true that the operation of ovariectomy would be apt to kill a half starved pauper in a crowded European hospital, and so would a hasty plate of soup,

a full meal, a dose of calomel and jalap, or a free blood-letting.

In the *Boston Medical Journal*, vol. v, p. 378, 380, Dr. Thos. Fereday, of Dudley, reported a case of ovarian tumor, spontaneously subsiding by a discharge of fluid from the vagina, estimated at from two to three gallons, in one night. In this instance the water no doubt made its way through the Fallopian tube into the uterus, and passed out of that organ through the vagina.

A similar case is reported in the *Transylvania Journal* of 1829, vol. ii, p. 97, 98. The patient had taken a dose of senna, and reported to the attending physician that it had not only operated on the bowels, but that she "had urinated during the night to an amount that not only astonished but alarmed her." The next morning the ovarian tumor, a very large one, had entirely disappeared. It had evidently broken into the uterus, through the Fallopian tube, and passing out, *per vias naturales*, was mistaken for urine. The Fallopian canal, when enlarged by hydroma or other causes, affords an open way to the cavities of the serous membranes, through which fluids, extravasated in the abdomen, may find their way out. It would also give a ready outlet to the water contained in ovarian cysts. Cysts are lined with a distinct secreting membrane, sometimes single, but generally composed of smaller cysts contained within a parent, attached by narrow pedicles, and communicating between themselves. When cysts are opened from without, no matter how small they may be, a dangerous inflammation is sure to follow, which nothing can cure but an entire destruction of the secreting surface by suppuration or by total excision.

Hence no cases of ovarian dropsy, which have been treated by puncture from without, have recovered, so far as my observation extends. I have seen the operation tried under the most favorable circumstances, and always without success.

No inflammation followed in the case in which I drew off a large quantity of gelatinous fluid by probing the Fallopian tube. The woman entirely recovered, and has since had a number of children.

The other two cases above mentioned, where the ovarian tumor spontaneously disappeared in one night under the excessive discharge of water from the natural passages, also entirely recovered. This new operation of reaching the cyst through the Fallopian ducts, is decidedly preferable to any other in cases which will admit of the fluid being reached in that manner. The operation is neither difficult nor painful, when the tube is sufficiently open to admit a small sized probe.

In a lady who was subject to a profuse discharge occasionally from the vagina, supposed to be leucorrhœa, I have several times pass-

ed a small sized catheter into the Fallopian tube. After gaining the cavity of the uterus, the catheter was passed very readily and without pain to so great a distance as to demonstrate, beyond a doubt, that it was far up in the Fallopian tube. It was only during the period of those aqueous discharges that I succeeded in passing it with facility to a distance that proved it to have passed beyond the cavity of the uterus. I am aware that ovarian tumors, besides the aqueous, semi-gelatinous, melicerous, and atheromatous matter, contain, in many instances, hair, teeth, fleshy substances and bones. Evacuating the liquid contents through the Fallopian tubes, it is very probable would cause the more solid, scirrhus, or sarcomatous materials, to liquify, and to escape in the same way. In the case that I reported, a mass of hard matter, as large as the fist could be felt in the ovarian region, which continued for a year or more before it finally disappeared. When I first operated she was fully as large as a pregnant woman at her full time.

Ovarian pathology mocks at all the learning of the schools. Who can account for a *dens sapientia* in the ovarium? Yet Dr. Archer, of Maryland, found a tooth of that character in the ovarium of a patient of his. See *Medical Repository*, vol. xii, p. 365. New York, 1859.

A great many other cases are recorded in various works on good authority, not only of hair, bones, and teeth being found in the ovaria, but, in some instances, of teeth set in an alveolar process, and in one case of bones in the ovarium of a child ten years old.

Too little attention is paid to the facts derived from American fields of experience, and too much importance is attached to the dogmas and opinions of book-makers and teachers in the large cities of Europe. They are mostly opposed to ovariectomy, because of the ill success which has attended it in Europe, and are slow to believe that inexperienced country physicians, in the backwoods of America, have been more successful than their most experienced and dexterous surgeons of their large hospitals. The error lies in their not taking into consideration the vast difference between the unfortunate people of Europe, living in an abnormal condition, scarcely one in a thousand occupying the position in society that nature intended him or her to fill—the sickly, infirm, and half-famished masses being compelled to overtask themselves to pamper to the luxuries of a few, whom luxury is enervating; and the more fortunate American people, living in a normal condition, all classes of society, men, women, and children, and negroes, occupying the position that nature intended for them, each having as much liberty as comports with the happiness, morality, prosperity, and com-

fort of the whole. Until due allowance is made for the difference of circumstances between the people of despotic Europe and those of the model Republic of the New World, the writers and teachers in London and Paris will find difficulty in believing that a physician in the little town of Augusta, in far distant Kentucky, Dr. Bradford, had been engaged in seven successive operations for ovarian dropsy, all proving successful, when their most successful surgeons have failed in five cases out of seven.

Many good meaning men, who have tried to probe the Fallopian tubes, both in the dead subject and the living, without success, would sooner believe that I had made a mistake and got no farther than the cavity of the uterus, than concede that a surgical operation had been performed, which Prof. Jackson and others of less note have regarded as impracticable, forgetting that the practicability or impracticability of the operation depends upon the circumstances of the case and not upon any remarkable skill of the operator—forgetting, also, that disease can work such changes in the Fallopian tubes as to give sufficient capacity to admit the hand, much less a probe. When the medical men of Europe take a lesson in politics and learn the important truth, what a normal government, by diffusing the blessings and comforts of life among all classes of society, can do in enabling the citizens thereof to bear surgical operations, that nine out of ten of the half-starved, over-worked subjects of abnormal governments would die under, they will be prepared to give due weight to the facts that American operators have contributed to surgery, and not before.

Respectfully, your obedient servant,

SAM'L A. CARTWRIGHT, M. D.

Dr. J. Taylor Bradford, Augusta, Ky.

I have other letters of much interest in favor of the operation, the authors of which are unwilling that they should go to the society in their present shape. They are mostly, however, confirmatory of the propriety of the operation, not statistical.

It is a singular fact, that in this country the operation of ovariectomy belongs almost exclusively to "Young America." So, too, in England and France, few of the older surgeons are found operating, but rather seem to have reversed that lucky maxim which Dean Swift practiced and taught, "That because he had spent a part of his life in leaving undone the things which he might have done, he would not throw away the remainder in despair."

No one thing, perhaps, has done more to prejudice the older surgeons against the operation than the blunders and errors of Mr. Lizars. And where errors and injudicious operations are committed by great men, we

are too apt to regard the thing, as in itself, hopeless under the same or similar circumstances. Is it not a fact, then, with the diminishing fatality of the operation, that many, very many, of the elder surgeons, without due investigation and reflection that the ovary is neither essential to the life or the health of the patient, declined to operate or countenance the legitimacy of the operation, because men equally or more renowned than they had failed, not, perhaps, from the manner in which the operation was performed, but selection of cases, from the undeveloped means of a proper diagnosis.

No one skilled in the selection of cases would have taken more than one out of the four cases operated on by Mr. Lizars; and their failure, because of his high position, for a time, rendered the operation palsied in all Europe.

You will observe in the letter of our distinguished countryman, Prof. Mott, of New York, addressed to me in 1854, and I hope it will not be considered uncourteous in alluding to it by way of illustration, that his prejudice to the operation is the result of the loss of two cases of his own, and of four which came under his observation. "In no one of these cases," says he, "was the tumor over fifteen pounds," whilst in his own cases one weighed six pounds, and the other ten.

Now let us examine for a moment these cases. It is a well settled principle, that rarely, if ever, in the early stages of ovarian tumor, is the constitution or the general health much disturbed. Why operate, then, where the tumor had only attained to six or ten pounds? The danger is greater, whilst the necessity of the operation is less.

My reading and study of the cases of the most successful operators, as well as my own experience, have taught me that there are two extremes in the time at which we should operate, both of which should be avoided. The one is where the tumor is small; the other where the operation has been delayed so long that the size of the tumor and the decline of the general health render it hazardous to operate. In the first place, I hold that in proportion to the increased size of the tumor, all other things being equal, will its pressure upon the adipose substance about the parietes of the abdomen produce its absorption, and the friction of the tumor against the peritoneum accustom it to that usage which renders it less sensitive; and less liable to take on inflammation.

The same principle holds good in pregnancy—in the earlier stages of it, before the womb has filled the abdomen, abortion, miscarriage, or premature labor, accidentally or superinduced, is known to be more dangerous than at the full period of utero gestation.

I have now been engaged, directly or indi-

rectly, in nine operations, all but one of which have been successful, and yet the smallest tumor weighed twenty-four pounds the largest sixty. There is, then, in this operation, as in most other things, a "happy medium," which, if arrived at, will insure the greatest degree of success.

I might cite an instance in the West similar to that of Prof. Mott, where the failure and errors of leading surgeons hover yet, like an incubus, over the operation, but it might seem like the child reproving the parent from whom he had received valued lessons too sacred to be cancelled.

There are other operations which have been much more fatal than ovariectomy, yet they are regarded as legitimate.

When the ligature was tied around the innominate the ninth time, with a fatal effect in every case. Dupuytren attempted it the tenth time with the same result. And after it had been performed the thirteenth time, all ending in death, the celebrated surgeon, Mr. Liston, whose dictum characterized ovariectomy as "belly ripping," attempted the ligature of the *arteria innominata* with the same fatal result. And yet the same surgeon, with many others, legalize this operation up to the sixteenth failure, without one case of success. Yet ovariectomy, with her increasing triumphs, is condemned.

In Mr. Merriman's list of twenty-three cases of Cæsarian operations. *London Lancet*, vol. i, 1851, p. 319, comprising all the operations in the British Isles, from 1738 to 1820, in but one case did the mother survive the operation, and we find among the operators the names of John Hunter and John Bell.

Mr. Radford, in a subsequent report, says: "But two out of fifty cases of Cæsarian operation, which occurred in Great Britain and Ireland, have recovered from the operation." And what is strange, one of these two, the first case ever operated on successfully to the mother, was operated on with a razor by an Irish midwife, Mary Donnelly.

Mr. Solly says that death from ovariectomy up to 1846 were only one in 31½. Dr. Atlee makes the mortality only 26½ per cent.; Dr. Robert Lee, over 37 per cent.; Mr. Phillips, over 39 per cent.; Dr. Cornaek, over 38 per cent.; Dr. Ashwall's table, over 36 per cent.; Dr. Lyman, in his table, says three-fifths of the operations are unsuccessful. Mr. Churchill says, "undoubtedly the mortality is very great, but a mortality nearly, if not quite as great, is not considered a fatal objection to other operations." "If," says he, "we take the major amputations of the limbs (primary and secondary,) it appears that in Paris, according to Malmagne, the mortality is upwards of one in two; in Glasgow, it is one in 2½; in the British hospitals it is one in 3½." As to amputation of the thigh, Mr. Syme ob-

serves, "the stern evidence of hospital statistics shows that the average frequency of deaths is not less than from sixty to seventy per cent.; of 987 cases collected by Mr. Phillips, 435 proved fatal, or 44 per cent.

Mr. Curling states, on referring to a table of amputations performed in the hospitals of London from 1837 to 1843, "I find 134 cases of amputation of the thigh and leg, of which 55 were fatal, giving a mortality of 41 per cent." Of 201 amputations of the thigh, performed in Parisian hospitals, and reported by Malmagne, 126 ended fatally. In the Edinburgh hospital 21 died out of 53. Even if we take much larger numbers we find the mortality very high. Dr. Inman has collected 3586 cases of amputation generally, primary and secondary, from accident or disease, and the deaths are one in 3 1-10. In 4937 cases published by Mr. Teniiek, the mortality is one in 3 1-15.

The result of the amputation at the hip-joint is still more unfavorable, Mr. James Cox has shown that, out of 84 cases, 26 were successful, and 58 unsuccessful.

Again: take operations for hernia, Sir A. Cooper records 36 deaths in 77 operations, and Dr. Inman 260 in 545.

Or, the ligature of large arteries, of which Mr. Phillips has collected 171 cases, of which 57 died; Dr. Inman 199 cases, of which 66 died. Of 40 cases of ligature of the subclavian artery, 18 proved fatal; the ligature of the innominate has been fatal in every case.

So that, taking the mortality of Dr. Lee's estimate, it is not higher in ovariectomy than in that of other operations, which are admitted to be justifiable notwithstanding.

I might, with equal propriety, refer you to the comparative statistics of Prof. Simpson, Dr. Atlee, and Dr. Buchanan, together with many others, but I trust the present are sufficient to convince you that the operation is not such a monstrous innovation on the dignity and legitimacy of surgical practice as some are wont to teach.

OPERATIONS IN KENTUCKY.

The following is, I believe, a complete collection of all the cases which have been operated on in Kentucky up to the present date. Some of them, you will see, are without any detail, notwithstanding I have addressed circulars, as well as private letters to the operators. Those of them contained in Dr. Lyman's report, I shall, for the sake of convenience, copy as condensed by him, the object being merely to give the leading characteristics of each particular case:

1. Buckner—Mrs. W.—Two solid tumors felt through the abdominal parietes; the upper very movable; the other wedged in the pelvis, and felt through rectum and vagina; opera-

tion June, 1848; incision from umbilicus to within an inch of symphysis; pedicle of the upper tumor attached to the lower, ligated, and removed; pedicle of lower tumor originating in the left Fallopian tube; ligature around the diseased left ovary; pedicle of tumor ligated in four equal parts; no adhesions; died sixth day of peritonitis.

2. Buckner.—Aged thirty-nine; several children; operation January 31st, 1850; incision eight inches; numerous adhesions; ligature around the pedicle; tumor of the right ovary removed; ligature fell thirty-ninth day; alarming symptoms, but the patient eventually recovered.

3. Blackman.—Tapped several times; operation December 22, 1855; adhesions slight; ovarian tumor of twenty-two pounds removed; no bad symptoms after; recovery.

4. Bush.—Not published; no report; died.

5. Bayless.—Mrs. Dredde, age 31; operation September, 1849; disease of seven years' standing; tapped seventeen times; incision ten inches; numerous adhesions, particularly around the tapping point. There was no distinct pedicle on either side, to guide the application of a ligature. It was all a confused mass. Tumor multi-locular; weight eighteen pounds besides theappings; ligature fell at the end of the eleventh month; recovered.

6. Bradford, J. J.—Not published; no report; died.

7. Bradford, J. Taylor.—Miss H., Mayslick, Ky., single, age 21; twelve years' growth, having commenced at nine years of age, after scarlatina; menses appeared at twelve and continued regular; variety of treatment; health failing; operation June 14, 1853; incision eighteen to twenty inches, between ensiform and pubis; adhesions to omentum; cyst tapped, extracted and double ligatures passed through the pedicle left ovary; forty-one pounds, containing, attached to inner wall, bony plate, varying in size from a pin's head to a saucer, with one large piece of bone embedded in the wall of the sac; up to sixteenth day; ligature fell sixth week; recovered.

8. Bradford, J. Taylor.—Miss M., Milford, Ky., age 20; menses regular; thirteen months' standing; progress rapid; never tapped; operation June 4, 1856; incision ten inches; tumor very vascular; cyst originated on broad ligament half inch from left ovary; ovary healthy and of normal size; ovary removed with cyst; no adhesions; tumor weighed twenty-four pounds, double ligature passed through pedicle; ligature fell fourth week; recovered.

9. Craig.—Mrs. H., age 26; one child; menses at 15; at 16 had suppression from cold, and never regular after; complicated with ascites, which disappeared several times under treatment; operation April 22, 1854;

tentative incision three inches, extended to scrobiculus; adhesions previously diagnosed; tapped cyst; found contents too thick to pass through canula; adhesions to omentum and mesentery; double ligature through pedicle; left ovary; recovered in seven weeks; solid parts eleven and three-quarter pounds.

10. Dunlap.—Mrs. B., age 37; five children; one year's growth; tapped four times in last six months; operation March 24, 1853; incision from umbilicus to pubis, twelve inches; adhesions slight; cyst evacuated; solid portion size of child's head; evacuated; double ligature to pedicle; thirteenth day walked across room; ligature fell in three weeks; left ovary; thirty-seven pounds; recovered.

11. Prof. B. W. Dudley.—Not published; no report; died.

12. Dudley, E. L.—Not published; no report; died.

13. Dudley, E. L.—Not published; no report from operator; operation abandoned; patient recovered.

N. B.—Received report from Dr. Dudley, April 7., too late for report.

14. Evans, A.—Not published; no report from operator; patient died.

15. Evans, A.—Not published; no report; recovered.

16. Gross.—Miss D., age 22; menses regular; eighteen months' growth; tapped three gallons three weeks before operation, June 19, 1849; incision three inches above umbilicus to pubis, one foot; right ovary; adherent, red, and vascular; ligature around the pedicle, which was narrow, and though tied with "great firmness," it came off after removal of the tumor; a large artery was secured, and another ligature applied around the pedicle, and one of the divided bands of adhesions, which showed a disposition to bleed, was ligatured also. The menses appeared for two days, the thirteenth day, and though the case looked promising, she died in four weeks of peritonitis; encysted tumor nine pounds.

17.—Miller.—Age 37; four months' growth; tapped previous week; operation April 6, 1848; incision, umbilicus to pubis; adhesions; two of the cysts tapped to reduce the size; tumor drawn out, and single ligature passed through pedicle; tumor removed, and remaining vessels of broad ligament secured separately; weight nine pounds and a quarter; last ligature came away thirty-first day; recovered.

18. McMillen.—Not published; no report; died.

N. B. Promised report, but did not receive it.

19. McDowell.—Mrs. Crawford; operation December, 1809; incision on left side, three inches from and parallel to rectus; nine inches long; ligature around pedicle; tumor

opened, and fifteen pounds of gelatinous substance removed; pedicle divided and sac extirpated; whole weight twenty-two pounds and a half; in five days, the report says, she was able to make her own bed, and in twenty-five days she went home.

20. McDowell.—Negress; after three or four years of mercurial treatment incision was made as in previous case; adhesions to bladder and uterus preventing its removal; the tumor was incised and gelatinous matter, and a quart of blood escaped; recovered from the operation; in two years the tumor was as large as ever.

21. McDowell.—Incision in linea alba an inch below umbilicus to within an inch of pubis; ligature around pedicle; incision extended two inches above umbilicus, and a "scirrhus ovarium," weighing six pounds removed. She was well in two weeks, with exception of the ligature which fell in five; recovered.

22. McDowell.—April 1, 1837: incision as in last case; ligature slipped, followed by profuse hemorrhage: vessels tied separately; some of them were cut through by the ligature finally passed a ligature around the pedicle again, and stitched it down: recovered from the operation, but was not in good health afterwards.

23. McDowell.—Operation May 11, 1829; had been under the treatment for others for eighteen months, with supposed ascites; treatment continued awhile; she was then tapped, and thirteen quarts of gelatinous fluid removed; in two months tapped again; and then discovered the tumor; in a few months was tapped the third time, when the incision was enlarged sufficiently to introduce a finger, to settle the diagnosis: tapped a fourth time, shortly before the operation; length of incision not mentioned; tied the pedicle, also a band of uterine adhesions, and removed the tumor; left ovary; died in three days of peritonitis.

24. McDowell.—Fifty-three years of age; operation 1822; incision six inches in linea alba; bloody serum gushed out and continued to flow until the sac was emptied; edges of wound approximated by interrupted sutures: the adhesions to the peritoneum being of such a character as to induce an abandonment of the operation: wound healed at the end of five weeks: patient lived twenty years after the operation: enjoyed good health. President Jackson was present at this operation, and the details were furnished Dr. Gross by Dr. James Overton, who was present at the operation.

25. McDowell.—Miss Plasters: operation May 12, 1823: incision whole length of linea alba; finding the tumor so large that it could not be removed entire, the sac was punctured.

The morbid mass was then lifted from its bed, a ligature having been previously cast around its footstalk, or uterine attachment; the edges of the wound were carefully closed in the usual manner, and the woman put to bed: for fifteen days after the operation there was a bloody, putrid discharge from the wounds, supposed by Dr. McDowell to be sloughing of the omentum. Patient entirely recovered. Dr. Gross is indebted to Dr. W. C. Galt, for many years a distinguished practitioner of Louisville, for the details of this case.

26. Smith.—Age 30; two children; menses regular; operation May 24, 1823; incision, umbilicus to within an inch of pubis; no adhesions; sac emptied of several pints of "watery matter," and with some difficulty extracted; ligature around the pedicle; right ovary of "scirrhus appearance;" menses returned profusely in five days; ligature fell twenty-fifth day; has been well since, except for pain in loins and abdomen during menstrual periods.

28. Smith.—Case successful. (Cooper's Surgical Dictionary.)

29. Smith.—Patient died of secondary hemorrhage from relaxation of the ligature some days after operation. (Cooper's Surgical Dictionary.)

30. Smith & McDowell.—Patient had ascites, for which she had tapped herself ninety times. Both considered the diagnosis as certain, but, on opening the abdomen no ovarian tumor was found; a mass of intestines, only, conglomerated by adhesions. She died.

ANALYSIS OF KENTUCKY CASES.

It will be observed in the details of the Kentucky cases, that many of them are incomplete in prominent points of statistical interest. In the eighth case of Dr. McDowell, five of which were published by himself, in but one is it stated whether the right or left ovary was the seat of disease, whether any were fibrous, etc.

Others again have failed to give the duration of the disease, whether married or single, whether they had borne children or not, age, etc.

In consequence of this omission on the part of those who have reported the cases, and the failure of others to report the unpublished cases as solicited by me, it will be impossible for me to give you anything like a complete analysis of them. I have stated the result of some of the unpublished cases on reliable authority, and if, in any instance, it is incorrect, it will be no less a regret to me than to the operator. I will note some of the leading points of interest so far as I have been able to get them.

Out of thirty operations performed in Ken-

tucky, nineteen recovered and eleven died, nearly two-thirds being successful.

Of the thirty operations for the removal of the tumor, it was completed in twenty-five; in five it was not completed.

Of the five cases in which the tumor was not removed, two recovered and three died.

In the five cases where the operation was abandoned, the cause of the failure is reported in but two, one from adhesions to the bladder and uterus, and one from peritoneal adhesions.

In one case, No. 30, no tumor was found: "a mass of intestines conglomerated by adhesions," accompanied by ascites.

In one case, No. 30, the patient tapped herself ninety times.

In but four cases is the cause of death given: three were from peritonitis, and one from hemorrhage.

In twelve cases, so far as stated, there were adhesions, or one in every two and a half.

In but two cases was the short incision practiced.

In one case, No. 8, the cyst formed on the broad ligament, and not in the ovary, weighed twenty-four pounds.

In one case, No. 9, accompanied by ascites.

In case No. 5, the ligature did not fall until the eleventh month.

No. 5, disease of seven years' standing.

No. 7, disease of twelve years' standing.

No. 7, disease commenced three years before the menstrual discharge occurred.

No. 7, contained a large piece of bone embedded in the sac with numerous particles of bony excrescences on the anterior superior part of the sac.

No. 7, the disease commenced at nine years of age.

It seems in the three hundred cases reported by Dr. Lyman, that this case of mine, No. 83 of his table and No. 7 of Kentucky cases, was the earliest period at which the disease commenced: and, on page 127 of his report, he alludes to it doubtfully, and says, if the "account may be relied on." I have no idea that Dr. Lyman made this allusion with any uncharitable intention, and I have no rebuke to offer, further than to reassert its correctness, and that the family physician, Dr. B. C. Duke, of Mayslick, Ky., and the mother of the young lady will bear testimony to the fact. But further: two years ago I saw a little girl in Utopia, O., four years old, whose abdomen was wonderfully distended. She walked about, but tottered as she went. She complained but little, except from over-exertion or the influence of cold when there would be some tenderness or soreness of the bowels. The general health was good, and in strange contrast with the enormity and extent of the disease, for I believe then the contents of the abdo-

men would have weighed twenty pounds. On examination of the tumor, I found it filling up every part of the abdomen, fluctuation was distinct, percussion was dull at every point, except on the opposite side to which she was lying, near the spine.

I learned from the mother that one year before, she observed a swelling as large as a goose-egg in the right groin. She complained more then than since; continued to enlarge, inclining for some months to the right side, until one day, in her own language, the "swelling was all over her bowels." To me it was a clear case of ovarian tumor. I have never met with one of which I was surer. I advised tapping and intended to follow it with iodine injections, bandage of Mr. Brown, etc.; but, for a time, the family postponed it. In the meantime they removed to Cincinnati, since which time, with all my curious interest in the case, I have not been able to hear one word.

In the *New York Journal of Medicine*, 1854, may be found a case of Mr. Cox, where a "healthy nursing infant" died of convulsions; the ovaries were found dropsical.

Mayor*—a case of a child seventeen days old, when the ovaries were dropsical.

London Lancet, vol. 2, 1845, p. 120, report of Royal Society of London, 1805, Mr. Charles Pedro reports a case where the ovaria were found wanting. Patient died at twenty-nine years of age.

Since circumstances noticed in preface induced me to change the character and material of this report. I had intended to report the cases of Dr. Dunlap and myself in detail, but as this report has already gone beyond my calculation, and as three of our operations are noticed in the Kentucky cases, and others of ours and my own, casually alluded to by way of illustration in the chapter on diagnosis and elsewhere, it were now seemingly useless.

It might seem that these cases were picked or selected, as peculiarly adapted to the operation. This may be true to some extent. Let us examine:

In one Miss Harrison, No. 7, of Kentucky cases, one of Kentucky's most distinguished surgeons a name that was "mightier" than "Elam, the chief of our mite," sent this interesting young lady, in the bloom of youth, to her friends, there to "shuffle off this mortal coil," as a hopeless case.

After the operation she returned home from Augusta to her parents. Not long after I chanced to meet her on board a steamboat on the Ohio river. I never shall forget that bounding step and weeping face, which moved my heart by the testimonies of her gratitude: and if there be anything which invites the love and ambition of the generous heart, or

*Lyman.

inspires an emotion worthy of our glorious triumphs in science, it is that of bearing "healing on our own wings," of giving "beauty for ashes, the oil of joy for mourning, and the garment of praise for the spirit of heaviness."

In another case, Mrs. Lastly, of Portsmouth, Ohio, Dr. Kimball, of Lowell, Massachusetts, a surgeon of considerable notoriety, opened the abdomen, and finding the adhesions, as he thought, insuperable, closed up the wound, and abandoned the operation. Dr. Dunlap and I, one year after, examined the case patiently, deliberately, and carefully, and operated successfully. See page —. In the one of these two cases the disease was of twelve years' standing, and the tumors weighed forty-one pounds. In the other the tumor weighed fifty odd pounds, and required twelve ligatures to the adhesions.

It may save reflection here to state, that contrary to the positive agreement made by Dr. Dunlap and myself whilst in partnership, we attempted the removal of an apparently justifiable, if any are, case of fibrous tumor of the uterus in a patient in Iowa, not ovarian tumor, which proved unsuccessful. I did not see the patient until the morning of the operation, but through the imploring entreaties of the patient and the attending physicians, as well as some recent published cases of the successful removal of the uterus, Dr. Dunlap was prevailed upon to take the case. I am as much responsible as he, and I mention this case because the bad as well as the good cases in surgery should be known, and to steel you to adhere to your opinions if well founded, independent of those who are not so responsible.

I have but little desire to indulge in idle speculation about the propriety of the operation; facts and figures are to decide the question, and if, by a principle of arithmetic, addition, multiplication and subtraction we give to each fact and figure its proper bearing, the answer will come out right. The opposers of Ovariectomy argue as though the improvements in diagnosis were finished, and the safest mode of operating had gained its acme. When the electric fluid was conducted from the cloud by the kite of Dr. Franklin, it did not stop there, or, but for a time, and now we find it leaping from city to city as the medium of conversation. Soon its submarine currents will relate to us the transactions in all Europe an hour ago. The great propelling power, which was first discovered escaping from the "mouth of a tea-kettle," was first applied to river steamers, now it "moves like a thing of life" over the Atlantic. And so every improvement has been gradually developed from one degree of perfection to another.

If you will examine the statistics since

1850, but more particularly since 1853, you will find, by comparison with previous operations, that the mortality has diminished, and why? Simply by the better developed state of the diagnosis, and the improved means of operating. The operation in itself is said by some to be a simple one: I have never viewed, or found it so: there are innumerable difficulties which sometimes arise, which not one in ten of the medical books, not even Mr. Brown, in his late work on the "Surgical Diseases of Women," hints at. It will be found by the statistical tables of Dr. Atlee and Dr. Lyman, that about twenty-five per cent. die from hemorrhage. How many writers or operators can you summon, who regard the condition of the pedicle when the ligature is applied as a matter of any consideration, whether it should be upon the stretch, or how? I have met with but one in my reading, Mr. Solly, and none in my intercourse who at first sight so regarded it. The pedicle, but more particularly the ligament of the ovary is very extensible and elastic. If the tumor be lifted out with much force, or by any movement which places the pedicle on the stretch, so much so, that it does not contract before the ligature is applied, that part of it which is most extensible when it does contract, is apt to slip through the ligature, and still, without close examination, look as though all was right. Once on turning the stump of a pedicle up to see if it was bleeding, I saw a part of the pedicle contracting within the ligature. I reflected much about this circumstance, and not until I read Mr. Solly's case, did I fully understand it.* Many cases, I have no doubt died from this cause. Prof. G. W. Bayless' Missouri case, Mr. Brown's, and many others, struck me as losing their lives from this cause. I hoped to speak of some of the leading features of the operation, it is now out of my power.

In conclusion, I have to say to the Medical Association, that it will be recollected by some of its members that most of my leisure time for two entire years was devoted to the collection and classification of statistics on Ovariectomy. But a few weeks before the meeting of the Convention, Dr. Lyman, of Boston, published a circular report embracing about the same number of cases, and as his cases and mine were gathered from the same sources, I was driven to the necessity in the very short time, to write the present report or fail to make one.

This is all the apology I have to make for the report as you find it, trusting that your "generosity will forgive what your good sense may see amiss."

**London Lancet*, vol. 1846, p. 442,

DOCTOR FRANCIS E. POLIN.

By ROBT. C. McCHORD, M. D. Lebanon.

As is now generally known by the medical profession of Kentucky, the first Cesarean Section ever performed in this State was done in 1852, near Springfield, by Dr. Francis E. Polin, of that countyseat town.

Dr. Polin was born at Springfield, September 8, 1827, and he died there January 2, 1860. He came of a race of highly respectable physicians and his literary and medical advantages were the best that the time afforded.

with Dr. Thomas J. Montgomery to see Mrs. Mary Brown, who resided in the country near Springfield, who had been in labor forty hours, during which time her physician had made several unsuccessful attempts at delivery. She was a robust, healthy woman, thirty-seven years of age, and the mother of six children. A hydrocephalic head was presenting, and the child being dead, it was punctured and the bones at the base of the skull crushed, but it was found impossible to deliver the child on account of its immense size. As a last resort it was determined to do a



DOCTOR FRANCIS E. POLIN

1827--1860

After graduating in medicine he began practicing in partnership with his father, Dr. John Polin, at Springfield.

Dr. Polin died at the early age of thirty-three, but he had already established an enviable reputation for his individuality and courage in professional work, in spite of the accusation of his rivals that he was often reckless. He was especially efficient and skillful in his surgical work. During the month of December, 1852, when he was only twenty-five years old, he was called in consultation

Cesarean Section, which was done by Dr. Polin, assisted by Dr. Montgomery, in an humble country home and with surroundings which were far from favorable.

"The abdomen was opened by a median incision extending from a point two inches above the pubes to the pit of the stomach. The child was removed from the womb by a longitudinal incision, and proved to be a monstrosity weighing twenty-five pounds. The incision in the uterus was closed by buried silver wire sutures, recently brought

into use by Dr. J. Marion Sims, and the edges of the abdominal wound brought together by alternate interrupted sutures of silver wire and flax thread. The woman was entirely well in about a month and lived to a very advanced age, dying about 15 years ago. She became the mother of two children after the operation, and suffered no inconvenience from the presence of the silver wire, except that during the pregnancies she had some uterine pains.

Never perhaps has there been a more interesting or lovable man in the medical history of Kentucky than Dr. Luke Pryor Blackburn. Born on a Woodford county farm, July 16, 1816, he studied medicine in Lexington, Ky., at Transylvania University, graduating from there in 1834. He commenced to practice his profession in that city, and there married Miss Ella Guest Boswell, daughter of Dr. Joseph Boswell of Lexington.

When the cholera broke out in Versailles,



DOCTOR LUKE P. BLACKBURN

1816--1887

Yellow Fever Expert and Hero and Governor of Kentucky.

DOCTOR LUKE P. BLACKBURN.

By J. N. McCORMACK, M. D., LL. D.,
Bowling Green.

The highest honor in the power of the citizen of a state to bestow, coming unsought and as a spontaneous tribute of affectionate appreciation from the hearts of thousands of grateful persons, the position of Governor of a great Commonwealth, was the unique distinction conferred upon Dr. Luke P. Blackburn by the people of Kentucky in recognition of splendid and heroic services.

Ky., in 1835 and some of the resident physicians were dead and others had fled from the town. Dr. Blackburn, alone, for days, answered the call for medical aid. His efforts were so successful and his work so self-sacrificing that when the scourge had passed away, he was warmly pressed by the people of Versailles to locate among them. This splendid service in the face of danger, rendered the citizens of Versailles, brought him deserved distinction at the very beginning of his professional career. He removed to Ver-

sailles and soon established an extensive and lucrative practice.

"Dr. Blackburn was a large, handsome man with a countenance as open and kindly as Sir Walter Scott's," said a professional man who knew him intimately in talking of him recently. "Tender-hearted, generous, fearless, frank, indifferent about wealth, wholly unpretending, with great good sense, and large experience and noteworthy success in his profession. He was a man of decided convictions and rarely failed to champion them."

In 1846 Dr. Blackburn moved to Natchez, Miss., and soon acquired a large and lucrative practice and gained considerable distinction over a great part of the South. In 1848 when yellow fever appeared in New Orleans, he was Health Officer at Natchez and the city authorities directed him to establish a quarantine, which he did effectually, and became so interested in the sufferings of the marines for whom the Government did not provide, as well as hundreds of others, that he built a hospital at his own expense, in which he again established a reputation for personal daring, professional skill and genuine philanthropy.

Gov. Albert Y. Brown, member of Congress from Mississippi, presented the case of Dr. Blackburn in Congress and stated that the necessities of a marine hospital at Natchez were so great, that one of his constituents, at his own expense and risk had taken charge of large numbers of the sufferers. A bill was at once passed providing for the erection of the Natchez Hospital, finally resulting in the establishment of ten other similar institutions over the country. Dr. Blackburn was appointed by the Government surgeon of the new hospital, and for a number of years held that position both in the State and Marine Hospitals at Natchez.

He early advanced the theory of exemption from Asiatic cholera by the use of pure soft water and had long been a believer in the transmissibility and infection of yellow fever, and in 1854 protected Natchez from that disease when it prevailed in the surrounding country by a rigid quarantine. So well was the power vested in him used that the fever was kept completely out of the county and people soon afterwards presented him with a handsome silver service inscribed "from the people of Allen County" as a token of their gratitude for his rigid and successful enforcement of the quarantine in 1854.

In 1857 Dr. Blackburn went abroad to visit the principal hospitals of England, Scotland, France and Germany, his wife having died several years previously. In Paris he met Miss Julia M. Churchill, of Louisville, Ky., youngest daughter of one of the most distinguished citizens of the state. In November of that year, on their return to America, Dr. Blackburn and Miss Churchill were married,

and located in New Orleans where the doctor resumed practice with his usual exceptional success and popularity. When the war broke out he had, far in advance, espoused the cause of the South, and, in fact, was one of the original secessionists.

He was at once attached as surgeon, to the personal staff of Gen. Sterling Price and the Legislature of Mississippi put fifty thousand dollars in his hands to be applied to the benefit of the suffering soldiers of that State, wherever he might find them.

In 1864 at the request of the Governor-General of Canada, he went to the Bermuda Islands to look after the suffering citizens and soldiers, and on his way was very flatteringly received by the Governor-General of New Brunswick and Nova Scotia, also by Sir Admiral Hope of the British Squadron, and his services were afterward favorably recognized by the Queen's Court of Admiralty.

In 1865 the yellow fever spread among many families in the vicinity of Fort Washington on Long Island, from an infected ship, and Dr. Blackburn, then being on a visit in New York, was invited by the Mayor to give his aid to the afflicted district, which he did, refusing all proffered compensation for his services.

He went to Arkansas in 1867, Mrs. Blackburn owning a plantation there, and for a period he engaged in planting, but in 1873 Dr. and Mrs. Blackburn returned to Kentucky and resided in Louisville, where he engaged in the practice of his profession.

In 1878 yellow fever in epidemic form again swept the South and the usual panic followed. Memphis, Nashville, St. Louis, Cincinnati and most other cities in this general latitude quarantined against the people further South. Some Louisville physicians claimed this was a needless precaution, that yellow fever could not exist so far north. Among them was Dr. T. S. Bell, a learned leader of medical thought in his day in the West, and a man of very positive convictions.

Dr. Blackburn took the opposite view, claimed that yellow fever had in fact existed further north than Louisville, had generations before decimated the population of Philadelphia, and contended that it would break out in Louisville if there was no quarantine against it. The discussion waxed warm. The two men, good friends, became almost estranged. Dr. Bell's view seemed to appeal to most of the citizens and the city government, and the gates of the city were thrown wide open. The refugees from the infected districts came in large numbers.

Weeks passed and there were no new cases. The citizens of Louisville were greatly praised for their courage and humanity. A quarantine against our southern kinspeople, it was said, would be heartless. Dr. Bell was the hero of

the hour. By general concert a demonstration of public confidence was planned.

A great concourse gathered in the old Exposition Building at Fourth and Chestnut streets, which rang with cheers as Dr. Bell was escorted to the stage by foremost citizens to receive a gold medal from the people. Dr. Blackburn's opinion was discredited, but he persisted that he was right, claiming that frost alone would prevent the spread of the disease in Louisville.

Then came reports that yellow fever was in Hickman and in other points in Western Kentucky, near the Mississippi and Ohio, where infected patients had been brought up the river. At first the reports were pooh-poohed in Louisville and elsewhere, but soon the truth could not be denied. Scores were dying at Hickman and undoubtedly of yellow fever.

Dr. Blackburn had not waited for this fact to be accepted by the people of Louisville, nor to say "I told you so," to them and to Dr. Bell. He had advocated a rigid quarantine to save the well, but his heart was with the suffering victims. On receipt of the first news from Hickman he went there and for weeks exposed his life for the welfare of the people nor did he leave until frost came and the last case had ended.

Then two gold medals were made. They are now amongst the valued relics of the Filson Club. On one of the medals is this inscription: "1878. Testimonial of Love and Gratitude from Southern Refugees."

On the other, this: "Luke P. Blackburn, M. D., for his devotion to the people of Hickman, Ky., and other southern cities during the plague of 1878"; and on the reverse side, "*non tibi solus, sed patriae et humanitati.*"

The people of Kentucky were prompt to recognize the fine heart and courage he had shown. Dr. Blackburn was the Hero of Hickman and surely no title of honor was ever more fairly won.

There was an approaching election for governor. Eminent, able and respected men, familiar with political methods, aspired to the office. Some suggested that the state's highest office and honor should be given to the "Hero of Hickman." Dr. Blackburn was wholly unversed in politics and guileless as a boy, but opposition was drowned by the votes of the people and he was overwhelmingly elected Governor of Kentucky.

His good sense and character made him an admirable governor. He knew men and his appointments were excellent. Having no "axe to grind" he left administrative details to the men he appointed to fill the various offices, and after all these are the two great characteristics of a good chief executive.

Across the street from the Governor's mansion at Frankfort was the penitentiary then

run much like a bull pen. The old buildings reeking with filth, immorality and disease, were outrageously over-crowded. Such conditions were then accepted as a matter of course for convicts. Modern ideas of prison reform had not permeated the public mind. But Governor Blackburn's great heart made him see, and his good sense and unyielding courage enabled him to right the cruel wrong.

He asked the legislature for a prompt appropriation for extra quarters for the crowded prisoners. It delayed. He asked again and the body debated and delayed. Legislators opposed spending money on convicts. Gov. Blackburn demanded quick action and was answered only by debates. Then he determined to act himself. He notified the Legislature that unless it forthwith granted relief, he would from day to day pardon and turn loose convicts until the whole number left could receive proper accommodations. The legislature was incensed, and still delayed.

The pardons began; public opinion supported the Governor, the Legislature surrendered. The extra buildings were ordered and built. On one day, fourteen of the pardoned convicts were borne on cots past the Governor's mansion, all of them in the last stages of tuberculosis, and all requesting to be allowed to be carried by the house of the chief executive that they might have the privilege of thus paying their respects to the Governor and his Lady.

Dr. Blackburn should be known as the father of prison reform in Kentucky. In this he was far ahead of his time. Another pioneer reform in the state prison initiated by his equally big hearted and courageous wife and always encouraged by him, was a Sunday school for the convicts, an institution which has grown with the years which has rendered priceless benefit to many of them and valuable service to the state.

After his term of office had ended, Governor Blackburn, still seeking to further the welfare of his fellowmen, determined to devote his remaining years to founding a sanatorium for the sick. It was established and operating in the suburbs of Louisville when death ended his really noble career in Frankfort, September 14, 1887.

His excellent wife survives him, universally esteemed and beloved.

DOCTOR PINCKNEY THOMPSON.

By J. N. McCormack, M. D., Bowling Green.

Dr. Thompson, justly entitled to be known as "The Father of the State Board of Health of Kentucky," and one of that State's most distinguished and honored physicians, was born in Livingston County, in this State, of substantial North Carolina parentage, April 15, 1828, and died at his home in Henderson April 11, 1897.

give his student and assistant many hospital and other advantages of great practical value. He graduated from this Louisville school in 1852, in the same class with Dr. D. W. Yandell and several others who made enviable names for themselves and at once located at Henderson where for forty-four years he enjoyed a large and lucrative practice and was widely known as a highly influential citizen and churchman.

While, as was the custom of that day, he



DOCTOR PINCKNEY THOMPSON

1828--1897

An active Sanitarian who was largely instrumental in the creation of the State Board of Health, and its President for the first fifteen years of its existence.

After the meagre advantages for a literary education afforded by the common schools of that day the ambitious young man spent two years as a student of medicine in the office of one of the best physicians of his native county, at the end of which time we find him matriculated as a student in the Medical Department of the University of Louisville and a private pupil of Dr. T. G. Richardson, demonstrator of anatomy in that institution, who in after years attained to such eminence as a surgeon in New Orleans, and who was able to

was a general practitioner, and did a number of successful lithotomies, and tracheotomies and similar operations, Dr. Thompson is justly entitled to go down in history as one of Kentucky's first and most distinguished sanitarians. He wrote and was mainly instrumental in securing the law creating the State Board of Health, in the spring of 1878, was appointed one of its charter members by Governor McCreary and was elected its first president, a position which he filled with signal ability and efficiency for sixteen years, cover-

ing the formative and most trying period of its history. Yellow fever was epidemic in the South when the Board was created and in spite of the exercise of all the precautions then known to sanitarians reached Hickman, Bowling Green and Louisville the following year, causing a high rate of mortality and great public alarm. When the small appropriation made for the Board was exhausted, Dr. Thompson generously provided the funds to combat the disease, visiting Hick-

DOCTOR LEMUEL C. PORTER.

By J. N. McCORMACK, M. D., Bowling Green.

Dr. Porter was born near Scottsville, Allen County, Kentucky, January 7, 1810, and died at his home in Bowling Green on January 1, 1887. He came of excellent Maryland and Virginia ancestry and as his father was a prosperous farmer and business man he gave his talented son all of the educational and social advantages of his section of the country in



DOCTOR LEMUEL C. PORTER

1810--1887

One of the leading practitioners and surgeons of Green River country

man and other infected districts and personally supervising the quarantine and other restrictive measures.

As part of this work he was an active factor in securing the legislation creating the National Board of Health, and in organizing the Sanitary Council of the Mississippi Valley and the American Public Health Association in 1884 and until failing health interfered was always one of the leading spirits in professional and church work and public affairs in his community and in the State.

that day. He began the study of medicine when a mere youth, taking up his residence in Lexington, then the great medical center of the West, in a short time became a private pupil and assistant of Dr. Benjamin W. Dudley, and graduated from the Medical Department of Transylvania in 1833. He went to Natchez, Mississippi, to practice but in a short time returned to Lexington for a year of post graduate work, influenced largely in this by his admiration for the professional and personal attainments of Dr. Dudley and for the scholar

snip and philosophical investigations and speculations of Dr. Charles Catwell, an impression of these two distinguished men, implied rather than expressed, which remained with and was an inspiration to him to the end of his days.

Nature had dealt kindly with Dr. Porter in every way. He had a commanding face and figure and all of the native dignity, courtliness and grace of manner, and studious care of the person, which marked the gentleman of the old school. From early life an omnivorous reader and close observer of affairs, there was added to his fund of knowledge an unostentatious felicity and charm of expression which made him a center of attraction in any circle. With such a personality and ability, and with the usual opportunities Lexington had furnished for professional study and observation, at the close of what would now be called a post-graduate course, he chose Bowling Green as a permanent location for practice, soon took high rank in his calling and was for more than half a century one of the leading surgeons and consultants of a large part of the Green and Barren River country, and the idol of such a following that almost a third of a century after his death, his name, his achievements and charity, and his forceful, piquant saying are still pleasant memories with a large population who never saw him.

Looking back over a long experience with and study of him in the sick, consulting and operating room, after all the only places for a real test of a practitioner of our art, and taking into consideration the scantiness of accurate scientific knowledge and absence of the modern aids to diagnosis which handicapped the physician of that day, his insight into his cases and his resourcefulness and success in meeting conditions by either medical or surgical means, or by watchful waiting, seems the more remarkable as the years go by. As a student, he rejected the heroic medication of that day, which reached its maximum in the teachings of Dr. John Esten Cooke, one of the professors in Transylvania, always using drugs sparingly, his original and inquiring mind reserving doubts of any powerful drug until its value had been proven by the experience of many trained observers.

Practicing upon a population essentially rural, and in his earlier years very sparse, to a degree he made the advantages compensate for the disadvantages in efforts for the solution of problems more different and often impossible of solution in cities or crowded communities. As an instance of his acute powers of observation and sagacity, he demonstrated early in his practice that smallpox was not communicable until the beginning of the pustular stage of the eruption, the end of the fifth day, since confirmed by thousands of observers, but even yet, although of the utmost

practical importance in managing outbreaks of this disease, taught in few medical schools and text-books. An earnest advocate of universal vaccination, on account of an experience, now confirmed by health officials everywhere, that a large percent of bovine virus from the best producers on the market either becomes wholly inert or loses much of its protective value by subjection to a high temperature in transit or in storing, he used only humanized virus obtained from the arms of maidens or children whose family histories were personally known to him, as the State Board of Health now officially advises be done, especially in country districts and towns where the virus cannot be kept on ice. He insisted that vaccination was practically universal, in the South at least, under the humanized virus regime, that it caused less local and constitutional disturbance and gave far greater protection than bovine virus, and that the hue and cry against it was not only a part of a commercial war led by the large concerns producing bovine virus, but that it was largely responsible for starting the anti-vaccination craze which had become so well organized and powerful since his day.

In addition to lithotomies, herniotomies, amputations and other operations in which he had been carefully trained, Dr. Porter seems to have given evidence of the same originality and boldness in other fields of surgery as marked his career in the practice of internal medicine. He did several nephrotomies, nine tracheotomies for foreign bodies in the air-passages, and performed the same operations many times for so-called croup and diphtheria. In this operation, he discarded and anathematized the trachea tube, because it would be likely to interfere with the escape of the foreign body when this did not occur at the time of the incision, and for the far stronger reason that the tube was itself a foreign body which would greatly increase the danger of pneumonia and other inflammatory mischiefs. Instead, he inserted two deep sutures in each side of the incision some distance from its ends, carefully avoiding the mucous membranes in doing so, protected the skin from pressure by small pads outside of the sutures and stretched the opening well by tying the threads back of the neck, the only dressing used being a damp silk handkerchief laid on the wound to keep it moist and to act as an air-strainer; these sutures being used to close the incision when the time came for doing this.

Another simple and highly useful operation devised by him in early life, to which he is entitled to the claim of priority, so far as the writer can ascertain, and at my suggestion perfected in technique by Dr. W. L. Rodman, of Philadelphia, and reported to the surgical section of the American Medical Association

shortly before he was elected President of that body, was one for the evacuation of the bladder in cases of impermeable stricture or other obstruction of the urethra. Failing to introduce a catheter or bougie, in the use of which he was an expert, he thrust an extra large trocar into the bladder, just above the pubis and well below the reflection of the peritoneum and, before much of the urine was allowed to escape, inserted a rather hard gum catheter—not a Nelaton—well into the bladder through the canula, drained off the balance of the urine, removed the ivory tip from the distal end of the catheter, withdrew the canula, stopped the opening in the catheter with a well fitted cork, tucked the loose end of it under the loop of adhesive plaster on the belly, and advised the patient to remove the

stopper and empty the bladder every six hours until the urine flowed freely through the urethra, when he was to return for a proper treatment of the cause of his trouble.

As seen through the dim vista of the long ago when we were so closely associated in practice and friendship, more like grandfather and grandson than as partners, and after a long life since in close professional and personal touch with leading medical men of our own and other countries, the writer is convinced that, but for a philosophical indifference to what he termed the bauble of a posthumous reputation, as a man, as an original thinker and as a physician and surgeon, few of our forbears were better entitled to a place among the "Medical Pioneers of Kentucky" than the subject of this sketch.



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EDITORIAL

THE CARREL-DAKIN TREATMENT—A REPLY TO DR. BEVAN.*

In the *Journal A. M. A.*, for Nov. 17, 1917, appears a letter by Dr. Arthur Dean Bevan in regard to the Carrel-Dakin treatment. This letter is based on such a complete misconception of Dr. Carrel's work and motives and is so untimely and ill-considered that one who does not know and admire Dr. Bevan, as I do, might wonder whence the source of his inspiration in attempting, in an academic discussion, to throw confusion into the Medical Department of our Army in regard to such an important scientific question. The President of the American Medical Association is the titular, and should be the real, head of the profession; but I respectfully submit that he is not the final judge on scientific matters, and that he has no right to give publicity to a personal letter which lends the weight of his authority to a destructive criticism without a semblance of investigation or knowledge of a conscientious scientific investigator and his associates, and a method of management of infected war wounds, which, in the hands of those skilled in its application, has demonstrated its value. His misconception of Dr. Carrel's technique and purposes is the only thing made plain in this letter.

In all the real scientific principles involved, wherein Dr. Bevan correctly interprets the findings of scientific clinical surgeons the world over, his conclusions had already been as well stated by Dr. Carrel in recording the results of his investigations.

Discussing war wounds, Dr. Carrel states that practically all such wounds, reaching the surgeon after an average time of six hours, are infected; and that when the surgeon sees them earlier than this; i.e., approximately immediately after they are injured; he may, at his own risk and not without grave danger to the patient, bring about immediate closure, after surgical cleansing, including the removal of foreign bodies. In the discussion of the matter, Dr. Carrel emphasizes the obvious fact that under his method of treatment the prin-

ciples of surgery and surgical pathology undergo no change whatever; that the mechanical cleansing of the wound and its necessary drainage should be done in exactly the same thorough and common sense way that modern surgical procedure dictates. When the wound is first seen six or eight hours after the injury, he states one may still close it after thorough mechanical cleansing, but that "one does not sleep so well that night, knowing the dangers to the patient of an infection of gas gangrene or septicemia."

Over and over again, Dr. Carrel emphasizes and re-emphasizes the problems of surgical pathology and exhibits a profound critical scientific knowledge of them. Over and over again, he states that Dakin's solution and the Carrel technique are modifications in method, and in no way change the principles underlying modern surgery. Over and over again, he states that some other antiseptic applied by another modification of technique may eventually be found more practical than the one which bears his name, but he insists, and so will everyone who really knows his work and who is interested in a proper conclusion of this matter, that whatever the technique, whatever the antiseptic proposed, its value shall be judged by exact, modern, scientific methods and not by the *ipse dixit* of some scientific clinical surgeon or surgeons, simply because he or they are willing, without a claim to personal knowledge or a pretense of scientific investigation, in the emergency of a great war where so much is at stake, to base the condemnation of a scientific method on a mere analysis of a little *precis* or manual which plainly states that its purpose is to refresh the memory of those who have participated in the course of study of the treatment under one who has had it demonstrated to him until he has mastered it.

If one were so unjust to Dr. Bevan as to characterize this publication of a personal letter based, as he says, on letters from Joe this, and Fred that, and one operation done by Josh somebody else, and the hurried and superficial reading of a book whose whole purpose and character he so evidently misconceives, he would not do justice to so charming a man.

The Carrel-Dakin treatment is not advanced as a miracle or cure-all, nor is it expected

*This editorial substantially appeared in the *Journal A. M. A.*, as a letter from its author.

that it will take the place of all other methods in the treatment of wounds and injuries. It is above all not expected that it shall be utilized by that class of scientific clinical surgeons who base their opinions upon the internal evidence of books, rather than upon knowledge of and experience in a method that can be seen with the eyes of the trained observer and correctly verified with the microscope and in the chemical laboratory.

All surgeons agree that the vast majority of war wounds are infected. This fact has been proven in every war hospital in Europe, and, before that, was known to every man who has rightly read the history of war. I am confident that Dr. Carrel would go much further than Dr. Bevan in the statement that 90 per cent. of the sum total of the value of wound treatment would consist of the proper employment of the well known and generally accepted rules of surgical technique, and would say that 100 per cent of its value would depend on this part of the treatment. Boric acid, aluminum acetate, Dakin's solution, Labarraque's solution, brilliant green, iodine, phenol, chloramin-T and di-chloramin-T, hydrogen peroxide, normal salt solution, sterile water, bichloride of mercury, and many other antiseptics, of varying dilutions and value, have been so thoroughly tried out and the results of their application so fully charted, by exactly the same painstaking methods, and by a scientific staff and allied investigators, that the surprise of his life awaits any scientific clinical surgeon, who bases his confidence in the future of surgical development on the history of the science, rather than on the scientific practice of the art.

After the mechanical cleansing which is entirely surgical, based on the well known principles of surgical pathology and which Dr. Carrel would evaluate not at 90 per cent., but as the *sine qua non* of success with any method of antiseptic treatment of wounds, he insists that the next step is sterilization of the wound. This does not mean *apparent* sterilization, but *surgical* sterilization under bacteriological control. Each day or two days smears are made from various parts of the wound and the bacteria present are stained and counted. If streptococci, staphylococci and bacilli are absent, one must find not more than one other microbe to five or ten fields before the wound is surgically sterile. If this degree of sterility is secured before the twelfth day there is rarely cicatricial tissue about its edges, the skin is not adherent and the wound may be closed with adhesive or sutures, as is most desirable. After the twelfth day, it is necessary to dissect away the cicatrices about the edge of the wound and it is the better practice to only insert the

sutures, continuing the application of the antiseptic for a few days, to be sure that sterility is maintained before they are tied. Surgical pathology would, of course, dictate that in the presence of edema there would be no wound closure.

"Dakin's solution is a solution of hypochlorite of soda which contains not less than 0.4 per cent. nor more than 0.5 per cent. sodium hypochlorite and which is not alkaline to powdered phenolphthalein, but is alkaline to alcoholic solution of phenolphthalein. If the percentage of sodium hypochlorite is less than 0.4 per cent. the antiseptic power of the solution is too low; if greater than 0.5 per cent. the solution is irritating. If the solution is alkaline to powdered phenolphthalein, the solution is irritating. If the solution is acid to alcoholic solution of phenolphthalein, the solution is unstable." If the chlorine containing antiseptic is too stable when in solution, it does not give up its chlorine with sufficient rapidity and does not give the desired result.

Dr. Carrel states that the conditions requisite for action of any antiseptic are contact, proper concentration of solution and a sufficient time. He states it so frequently that the most superficial observer should know that he believes he has proven that the wound must be so prepared by the practical application of the principles of modern scientific surgical pathology, that the antiseptic being tested must come in contact with the tissue itself, and that all necrotic tissues and foreign bodies must have been removed and hemostasis be perfect.

Dr. Carrel knows as Dr. Bevan states, "that wound healing and the freeing of tissues and the organism from infection depends so largely on the life processes in the living cells at the point of injury and infection . . . that the important thing a surgeon can do is to eliminate noxious influences and place the particular part injured . . . where this wound repair and elimination of infection can go on uninterfered with as little as possible." Dr. Carrel has proven by accurate, painstaking investigation, and states repeatedly, that "no antiseptic has any healing property."

In the Carrel technique, the Dakin solution is brought in contact with all parts of the wound through the insertion of rubber tubes of certain dimensions, having perforations of exact sizes at certain intervals, so that the desired concentration of solution will reach every part of the wound every two hours. This contact of the antiseptic in this exact concentration of solution shall be continued for the time necessary to bring about asepsis. Dr. Carrel states, always, that this is no new treatment. It is well known that Chamberlain discovered the action of chloramins long ago,

but the *systemization* is, however, new, and it is perfectly evident to the most casual reader that it is as new to many of our most distinguished clinical surgeons as to the thousands of wounded soldiers who have been restored to the front by its application, where other methods left them languishing in the hospitals or resulted in loss of limbs or life.

But Dr. Carrel has gone much further in his search for a definite means of expressing the value of an antiseptic. He has found from extensive study of the actual wounds themselves, working with others to whom he gives most of the credit, that there are definite laws of cicatrization. A surgically sterile wound, carefully measured, and its area determined by a planimeter, at four day intervals, will cicatrize at a rate which is capable of expression in a mathematical curve, and may be demonstrated by a mathematical formula. Practically, each surgically sterile wound is measured, its area plotted and this is repeated and recorded every four days. With these and certain other factors known, the normal curve of cicatrization of that particular wound is calculated. Afterwards, repeated measurements at four day intervals show how much the treatment applied by the surgeon *delays* cicatrization. Dr. Carrel states definitely and repeatedly that *no known treatment hastens cicatrization*, but that surgical sterility is an essential pre-requisite for the normal rate of cicatrization.

This method of mathematical control of cicatrization is applied not only to wounds in general but to each particular wound, so that the scientific surgeon, properly advised by a practical bacteriologist, is able to know when normal cicatrization has been delayed either by the "*laissez faire*" policy of some scientific clinical surgeon leaving behind necrotic tissues to be cared for or foreign bodies to become encapsulated or by any other condition demanding surgical interference. That the other antiseptics suggested by Dr. Bevan, and hundreds of others about which his silence suggests his lack of knowledge and experience as eloquently as his written word does about those things of which this letter is written, have been accurately and properly evaluated and discarded, should not, but doubtless will surprise him.

I am not attempting to give any further details than are necessary to show that the Carrel-Dakin method of treatment of war wounds is based on scientific data, against which the fiat of anyone can not and should not prevail. Repeated contact with Dr. Carrel leads us to recognize in him a degree of scientific precision and personal modesty that would prevent his replying in kind to such a letter as that of Dr. Bevan.

Exactly such a misconstruction of Lister's

work as is attempted in the Bevan letter has ever since kept many surgeons from getting the benefit from antiseptics that Lister did, while other practical men, refusing to be misled, have continued to secure Lister's results by the real application of Lister's methods, disregarding his necessarily faulty lines of reasoning in regard to them.

Dr. Bevan by this attack without study or practical knowledge of his subject is but repeating history. Semmelweis, Jenner, McDowell, Crawford Long—every man who has advanced the practical art of medicine, has had some one of the old Priests-of-the-vested-right-in-knowledge to condemn him and his methods and results in unmeasured terms, and our profession has rarely recognized during their life-time its best promoters except by the contumely and condemnation of the self-righteous.

To Dr. Carrel, I would express the hope that neither preachments nor pronouncements shall cause him to deviate from the scientific study which he has so well initiated at *Compeigne*. I congratulate him alike upon his accuracy and his modesty, and I venture to hazard the prophecy that the men who attack him will have been forgotten, while medical history sounds his praise, not so much for the remarkable technique which he has perfected for the application of a definite concentration of a definite solution to infected war wounds, but because he and his painstaking and accurate associates have devised an exact method for the evaluation of whatever method of treatment of war wounds is proposed by a laboratory man, a scientific clinical surgeon, or a surgical pathologist.

To Dr. Bevan, I would express the hope that, before he either condemns or approves anything which claims to be for the good of mankind and the improvement of the conditions of the afflicted, he make a real investigation of the matter about which he speaks with so much authority, incurring the risk Dr. Carrel has so willingly faced at the front, and I would particularly urge that he keep silent unless he, himself, has sufficient knowledge and experience to entitle him to an opinion worthy of his exalted official position.

It is important for the profession to understand that its final verdict on Dr. Carrel's definite method of the treatment of infected war wounds by the use of Dakin's solution is likely to be more influenced by erroneous comment from three sources than by the merits or demerits of the method itself. These are likely to come, first, from those who, like Dr. Bevan, condemn academically without either investigation or knowledge; second, those who accept the suggested treatment because it is novel and new without knowledge or investigation, and who, without understanding the

reason, change or modify the technique so that it becomes wholly inadequate; and, third, those who honestly think they have investigated the Carrel-Dakin technique when really they have studied the work of someone of the second class. It is a serious question whether such a method, requiring what seems to one first seeing it a somewhat complicated technique is not more in danger of being misjudged from the statements of its ill-advised and frequently over-enthusiastic advocates, than its ill-informed and reactionary opponents.

A. T. McCORMACK.

THE LOUISVILLE MEETING.

The recent meeting in Louisville was in many respects the most interesting and profitable one the Association has ever held. When one considers that nearly 300 of our members are already on duty in the Army, the recorded attendance of 447 is most creditable. Besides these, there were probably 125 visiting physicians present from Camp Zachary Taylor.

The outstanding scientific features of the session were the two addresses of Dr. Loewy of the French Army, modest, unassuming, but wonderfully definite and efficient. Dr. Loewy, in the afternoon, made such a simple, thorough-going explanation of the principles underlying the Carrel-Dakin antiseptic treatment of war wounds that the laymen present could appreciate and understand it. It is entirely possible, as Dr. Carrel constantly says in his demonstrations, that other antiseptics and modified technique may be found necessary and improvements are unquestionably coming, but Carrel has set up a standard by which any proposed treatment of War wounds will have to be judged, and it is important to the profession generally to master this technique in order that they may not be led away from it by some sophist who will suggest an easier plan. It is to be remembered always that the underlying principles of surgery cannot be forgotten. War wounds must be laid open, effective drainage provided and foreign bodies as thoroughly removed as ever—even more so. Whatever antiseptic is used, it must be capable of definitely sterilizing the wound and this sterilization must be so complete that the wound may be closed by suture or other method. It is not enough to sufficiently cleanse the wound to permit it to heal by granulation. The essential in war surgery is to get the wounded man back to the front with the least possible delay. The time will soon be here when the same standard will be required by industry in peace surgery.

At the evening session, Dr. Loewy's wonderful exhibit of Lumiere colored plates showing the remarkable results of the accurate Carrel-Dakin treatment of infected war wounds was so convincing that no sane man

could see them and afterwards feel satisfied if he treated such wounds by any method less complete.

At the evening session, Major Henry D. Jump of the Medical Reserve Corps, who was the President of the Philadelphia County Medical Society when the war broke out, read a most practical paper on the transportation of the injured in war, and then presented some reels which had been furnished him by the Surgeon General's office, showing the battle of Courcette and the participation of our Canadian brethren in it. No other argument has ever been so convincing to the conscientious physician as it is made at the front "out there." Just now one's family, one's patients and one's friends will present the most pressing arguments as to the importance of each remaining at home, but it is important that we remember that when casualty lists come in if they are accompanied by cablegrams saying that hundreds of our boys had to wait their turn to be treated when wounded because there were not enough doctors, these same people who now urge us to stay at home will be even more insistent in their condemnation of us for having taken their earlier advice.

Lieutenant Elfrid, of the Medical Reserve Corps, gave a most remarkable demonstration of the methods of defense against the gas attacks with which the Huns have done such dreadful damage. He had the most recent masks that have been devised for the protection of our soldiers and gave the scientific and practical explanation of the whole matter in a most interesting and vivid way.

In selecting these matters for particular comment, it must be understood that the essayists who represented the membership of the Association, itself, presented matters of unusual interest as was to have been expected of them. As usual, there was not an absentee among our essayists. We are accustomed to this state of things in Kentucky, as no other Medical Association is, but it is a thing of which we can be especially proud.

As a result of the meeting and the high standard maintained by the medical profession of Kentucky, forty of the very best physicians in the State were examined for the Medical Reserve Corps. While several were found physically unable to go, they all showed their willingness. The records of the Surgeon General's office show that this is more than three times as many men as were examined at any other medical meeting during the year. It is of interest to note that Kentucky, North Carolina and Virginia are the only three of the Southern states which have at present exceeded their quota in supplying officers for the Medical Reserve Corps; that the

others have failed to do so is only because they have not understood the need.

The 1917 session at Louisville will go down in the history of the Association as the most inspiring session it has ever held.

THE MEETING OF MEDICAL MEMBERS OF DRAFT BOARDS.

An unusual addition to the program of the annual meeting of the State Association was the called session on Tuesday night of the medical members of the County Draft Boards. This session was presided over by Dr. C. Z. Aud, the member of the Board of Appeals for the Central District.

A most notable address was delivered by the Governor. This distinguished orator and statesman never appeared to better advantage and the audience which crowded the Auditorium were thrilled by the repeated climaxes of a most remarkable patriotic address. Disclaiming all partisanship and appealing for united action for the defense of the State, the Country and Freedom, he expressed the appreciation which the whole Nation feels toward the self-sacrificing physicians who have made the work of the County Draft Boards a success.

Following him, Major Hamburger and Major Board made some valuable, constructive suggestions in regard to future examinations, with a view to the elimination of certain classes of cases which had come in with the first draft, and Lieutenant Stone gave a most interesting description of the cardiovascular defects that had developed in certain classes of the draft army since they reached the Camp.

Dr. John McMullen, of the U. S. Public Health Service, made a most interesting, practical demonstration of the methods of diagnosis of Trachoma, and added to the debt of gratitude which the profession and people of Kentucky owe him.

Following this, there was a general discussion by the members of the various Draft Boards who were present. It is of interest that only six counties were not represented at the meeting by their Board members. Everyone left the meeting feeling that the people of Kentucky and the whole Country realize that the Kentucky Examining Boards had had a smaller percentage of men rejected than from any other State; that they had contributed the very best young men the State had for the National Army, and that the history of the State would be adorned forever with a list of self-sacrificing patriotic physicians who had performed the arduous labors as medical members of the County Draft Boards. They all feel that their work has been the preliminary skirmish in the great battle for freedom in the War with Germany.

WHEN THE WAR WILL END.

At the recent meeting of the Southern Medical Association in Memphis, which was the most successful meeting it has ever held, a remarkable War program was given. Every speaker who has been in France emphasized the fact that the War is just beginning, and that it will be won when this Country is ready and prepared; in fact, one speaker summed it all up, and he was probably the one best qualified to speak, by saying that when the United States has 10,000,000 men fully armed and equipped in France at one time the War would be over, and not until then.

These lines are not written with a view to causing unnecessary alarm, but with a view to causing that necessary realization of the stern facts before us that we may all prepare to make what sacrifice is necessary to win, as win we must.

SCIENTIFIC EDITORIALS

SYPHILIS OF THE STOMACH.

Just about 6 years ago a young negro man entered a hospital with acute gastro-intestinal symptoms. At first consideration it seemed to be a case of gastric ulcer, but physical examination and history taking revealed an active lues. One of the authors of this article was in charge of the case and blundered on the correct diagnosis, syphilis of the gastro-intestinal tract. Now at that time there had been no systematic study through extensive autopsical and pathological examination of syphilis of the heart, aorta, lungs, kidneys, gastro-intestinal tract, spleen, etc. Brief mention might be found in a few text-books of the possibility of syphilis causing gastro-intestinal symptoms, but most authorities ignored the subject. That is why we have never ceased to wonder at our correct diagnosis in this case, and we mention it now, not to claim credit for it, but to call attention to how little was known about gastro-intestinal lues then and the immense gain in our knowledge of this subject during the past few years.

Among the investigators whose names might be mentioned we refer to Boas, Chiari, Fraenkel, Stolper, Ewald, Barbier, Carre and Juliusberg. Various figures, based on their more recent investigations, place syphilis as a cause of from 5 to 20 per cent of all gastric ulcers.

Max Einhorn states that not only a large percentage of gastric ulcers, but stenosis of the oesophagus and diffuse infiltration, are of syphilitic origin. Hilliard calls attention to the close resemblance that may exist between gastric syphilis and carcinoma. He urges the necessity of a Wassermann test in these cases.

and, if the reaction is positive, anti-syphilitic treatment.

Gastric lues may simulate an acute or chronic gastritis, ulcer, cancer or gastroptosis, depending upon the type of infection and its location. There may be a well-defined ulcer, a diffuse inflammation of one or many gummata, ranging in size from a pea to an orange, or even larger. Even a single gumma may cause gastric stenosis, dilation, etc., if situated at the pylorus, while large tumor-masses may, by their weight alone, produce distortion of the stomach or gastroptosis. The gummatous type of lesion is very apt to be mistaken for carcinoma, owing to the presence of a palpable tumor, anaclidity, gastric stenosis and dilation, vomiting and even cachexia, the latter due partly to lack of nourishment, partly to the well known toxic effect of syphilis.

The gastric secretion has been studied in too few cases as yet for definite conclusions. However, since the majority of these cases have stenosis it is not surprising to hear that anaclidity is the rule. Hausman claims that it is a typical clinical finding in gastric lues. Nocturnal pain was a frequently reported symptom. Typical ulcer-symptoms (epigastric pain, shooting pains in the spine, haematemesis and melena) were met with in syphilitic ulcer of the stomach. Rarely is there severe or fairly constant vomiting, nor is hemorrhage a frequent symptom. Sense of weight in the stomach, anorexia, belching of gas, distention of stomach, these are more common.

Although vigorous anti-leutic treatment usually causes a fairly prompt subsidence of the symptoms, in some cases there has been scar formation and cicatricial contraction, with permanent stenosis or other distortion, and here such treatment is of course, of no avail. However, as long as there is a positive Wassermann anti-leutic treatment should be continued in these gastric cases in the hope of curing the disease or preventing further damage.

M. L. RAYITCH and S. A. STEINBERG.

Method of Spread of Gas Gangrene.—The rapidity of spread of gas gangrene into living voluntary muscle is so remarkable as to require explanation by a different process from that which governs ordinary septic invasion of tissues. It is suggested by the authors that the facts are accounted for by the peculiar anatomic structure of muscular tissue. The sheaths enclosing the long potential spaces into which toxic material can readily pass, causing necrosis of the fibres. The early selective invasion of single muscles is consistent with the above view.

PRESIDENT'S ADDRESS*

THE TREND OF MEDICAL EDUCATION.

By MAJ. P. H. STEWART, M. R. C., Paducah.

May I here be permitted to express my gratitude and thanks for the honor you have conferred upon me in electing me to the highest position in the gift of the Kentucky State Medical Society. I would be in every way unworthy did my very soul fail to respond to the realization that so far as is within the gift of the profession of Kentucky, I have reached the highest round on the ladder, and while possibly on account of natural inability and short comings, I may not be able to fill the duties of the office in the manner becoming the exalted position, yet I assure you now, that the best that God has endowed me with shall be exerted to its utmost in the development, interest and welfare of this, one of the greatest, grandest and best state societies of the union. If I do not thank you adequately it is not because gratitude is lacking but because words with which to express it are insufficient.

I realize that it has been customary to elect only the old members, and those ready to retire from the active interest in work, as a fitting and crowning glory to a useful life, or that it is but a public expression of faith and trust to one ready to be placed upon the shelf, and a tribute to a life to be filed away in the archives of the pages of oblivion, and I assure you that could I realize this society even hoped to place me in either category, great as is the honor of being president, I should with pleasure and dispatch decline the honor.

Presidential addresses have been the custom from almost time immemorial, and every subject, whether alive or dead, germane or foreign to the field of medicine has been discussed, until it does seem as if the end is reached, yet there arises from time to time new conditions, new ideas, new demands; and from these new demands, new situations which must be met and dealt with as will work out the greatest good to the greatest number.

In a democracy such as this country, evolution is voluntary, and growth, development and advancement are but the demands of human hearts, and desires of progressing people, and not the dictates of kings, kaisers and monarchies. If a condition is right all the people endorse it, if wrong, the majority change it, and the minority accepts the change as beneficial to the whole.

During the last decade demands for radical reforms in the medical profession have arisen, both from those whom we serve and also within the profession. How punctilious-

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ly and thoroughly these changes have been met we have only to revert to twenty years ago to the requirements of an applicant for graduation in medicine, and compare them with the high standards of to-day. Then no premedical education was considered a prerequisite, but it was generally considered the less one knew at the time of beginning his stay in a medical school, the better doctor he would make after being licensed to practice death and destruction upon a confiding and helpless public, and this opinion was shared not only by the public, but largely by the profession, because most of it stood on the same common level. All that was demanded and required of a student was that he have means and money sufficient to carry him through two short courses of six months each in a medical school, and under proper inducement he could sometimes secure a reduction of from one-half to all of costs of tuition. But this country being a democracy, and forever pledged by the blood of our ancestors and the best of our traditions that here shall remain adamant and as dominating as Gibraltar the true home of all that real democracy means—a nation free in all things, pledged to the highest ideals, a liberty loving country, in which fair play and the welfare of *all* precludes the mistaking of liberty for license, but insures the people good government, good ideals, advancing prosperity, and the betterment of all within its domain, realized the inadequacy of these requirements and have completely revolutionized both the medical and premedical educational requirements, and to-day no country is in a more advanced position than we in the matter of medical education. This revolution has been brought about slowly it is true, but with its growth and development we have been prepared and made ready in most instances to meet the requirements necessitated by the changes, and able to solve the different and difficult problems as they would arise, yet with a prophetic eye, one may see looming up in the not far distant future, on the horizon of our prospectus a dearth and scarcity of those carrying the banner of sanitation, hygiene and good health in the battle against disease, human misery and death. This catastrophe can only be prevented by now making preparations against it. While statistics may appear to prove that the annual decrease in the number of medical graduates is infinitesimal, yet the high standard of medical and premedical requirements in effect to-day can but eventually result in a scarcity and a greater demand for doctors, especially in rural communities. I would not deerv the standard—it is not too high, but it is high enough, and some arrangements must be made to meet it in order to supply the demands of the future.

It is true the high standards in effect to-

day do most certainly encourage growth and multiplication of sects, cults and quack systems, by offering opportunity to enter into a life's work at an earlier age and shorter term of study and a great reduction in money cost, but the future requirements will demand the same premedical education and the same knowledge of anatomy and pathology of every one, and this demand will sound the death knell to all but legitimate medicine. It is to be only "the survival of the fittest."

The day is approaching in which the mortality in the medical profession will fast outstrip the recruiting by virtue of new graduates to its ranks; in fact it is now upon us—while the mortality may not be on the increase, the number graduating from year to year since 1905 manifests a reduction of nearly 50 per cent., and with the increased cost of everything in life, more inviting fields of opportunity opening up to the best of our young manhood, and with the resulting devastation to both the doctors now in practice and those who anticipate taking up medicine as a life work, by this hellish and horrible maelstrom in which our government is combined with most all civilized governments, in fighting and bringing to an eternal death all autoeracy, and the establishment of a universal liberty for all mankind, our members and efficiency must show a more marked depletion than can be anticipated, and suffering humanity will cry out for relief.

There may be many ways in which to meet these demands but to me the one course open, and offering the greatest ease of attack is through our present day educational system. At present we are graduating our men in medicine, including hospital internship at about 28 years of age. This can and must be reduced by at least two years. Statistics available prove beyond question of doubt, that those entering the active life of the medical profession at from 25 to 26 years of age live a more useful life, and in every way are more successful than at a later period.

If we aspire to lead the world in educational advancement it is imperative that our whole school curriculum be revised and revolutionized, for under our present system more time is wasted than utilized. If we are striving for efficiency, there can be no reason why our schools from elementary to completion of college course should not consist of terms of longer time. The usual length of school year in our American cities is less than 175 days, after holidays are counted out, and the average length of the school day is five hours. In our rural schools the average school year is from ten to seventy days shorted than in the cities. In western European countries, Canada, Australia, New Zealand and Japan the school year is from 220 to 240 days. A German commission sent to this country a

few years ago to study our schools is said to have begun its report with the statement, that the principal and most striking feature of the American school system is the length of the vacation period—I do not believe that teachers or pupils need 190 days in which to rest from the labors of 175 days.

By lengthening the school terms in elementary, high school, college and medical schools, increasing school hours, revising school curriculum, eliminating many studies now compulsory which are in no way essential to professional or business life, more than two years of time can be saved in school life without decreasing efficiency. In this country a child does not start his school life until six years of age, then before him stand eight years in elementary studies, four years in high school, four years in college, four years in medical school and from one to two years internship, making not less than twenty-eight of the best years of life spent preparing for life's work. Unless a revision of studies and shortening of time can be accomplished without lowering the standard of efficiency, a short time is certain to bring a dearth and scarcity of doctors, especially in scarcely populated communities. Under the present requirements no man is going to spend the time, money and energy necessary to graduate in medicine, and then locate in a community where opportunities for rapid advancement in his profession are few, and the time so long drawn out in which he can attain the point of being self-sustaining and successful from a financial standpoint. Lack of definite education and professional preparation on the part of teachers is another serious drawback to the advancement of pupils. In our schools a large part of our teachers are too young and too inexperienced. The point determining the employment of teachers is smallness of salary, and not greatness of fitness and efficiency. Not more than half have had a good modern high school education, and less than one-fourth have had as much as two years of college or normal school work after graduating from a four year high school. High school teachers are too often young men without maturity of mind or scholarship, and with no preparation for work. Lack of education, professional training, experience and skill on the part of teachers cannot help but produce a slowness of progress and retarding influence on their pupils. Neither can we expect efficiency in teaching without proper remuneration. Until the standard of pay is increased you cannot hope to increase the standard of efficiency in your teachers. The constant changing of teachers in both elementary and high school is another impediment and handicap to both advancement and efficiency of pupils. In the country especially, teachers come and go, and two

thirds of them are constantly changing and teaching in new places from year to year, and less than 10 per cent remain longer than three years. This is primarily due to the present day school board system, in which our boards are composed of politicians or citizens possessing no degree of intelligence or fitness to teachers or educational requirements.

The lack of definite organization of course of study is another cause for time consumed in, especially elementary and high school courses. Many subjects are now embraced and taught in both schools, which have absolutely no bearing in shaping the progress, or influencing the success of a graduate of medicine or any other profession. These courses are only continued to be taught just because they have existed back to the time where the "memory of man runneth not." The time must come, when the student of medicine will early select his professional vocation, so that his course of study can be early selected, and his life work in educational lines be shaped to his particular calling, thereby condensing into a shorter time of study a fewer number of subjects, and save at least one year of school life.

Matriculants in medical colleges have decreased fifty per cent. within the last two years, and with other professions proving more alluring and enticing, offering better opportunities for earlier life work, and self sustaining hopes held out with remunerating returns, future years can but see a still greater reduction. This marked reduction can but eventually reduce the rural communities especially to medical want, increase disease and pestilence, reduce community efficiency and increase mortality. I am reliably informed that already there are two counties in Kentucky which have not one doctor in them, and shortly the same cry will emanate from others. These conditions can be prevented only by increasing educational opportunities, improving the ability of teaching forces, rearranging school curriculum so as to eliminate unnecessary studies now embraced, shortening the number of years, reducing holidays and extending school terms to at least eleven months of six days to each week. These changes are not only possible, but are essential in the very near future, and in my judgment the day is now here when conditions are demanding that those in charge of our educational systems should begin to recognize, and arrange to meet them.

The Depopulation of France.—This committee report presents the present status of the outlook for the natality of France, and urges the adoption of resolutions prohibiting birth-control propaganda, and proposes taxation of the childless to provide pensions for families with children, with stricter enforcement of the laws against induced abortion. The discussion is to be continued.

ORATION IN MEDICINE

A PLEA FOR MORE RATIONAL THERAPEUSIS.*

By SIDNEY J. MEYERS, Louisville.

It has been customary for the Orator in Medicine to discuss the progress and improvements in therapeutics made during the year, and I wish to apologize for departing from the rule. My excuse is that there have been few recent therapeutic advances which seem worthy of consideration, excepting along military lines, the discussion of which is purposely omitted because the program contains other papers which cover the various phases of military practice by men more able than I. Pardon brevity but I will have had my say.

The practice of medicine seems to have become more irrational than formerly, there are many fallacies still existing, new fads have been introduced, and others discarded years ago have been revived. The modern practitioner seems prone to worship at the shrine of strange gods of irrational therapeutics, such as vaccines, proprietary drugs, the animal extracts, sera, phylacogens, alkaloids, etc. Rational medicine has thus been forced into the background, capable compounding pharmacists are becoming rare, and many physicians no longer write prescriptions for Galenical preparations, every drug or combination of medicinal agents used in their practice being of the "ready-made" variety. It is well known that some practitioners here as well as elsewhere admit that they rarely write prescriptions for anything but proprietary remedies, yet they have been engaged in practice for several years. Others are equally irrational and attempt to cure everything "from pinaples to piles" by the administration of stock or autogenous vaccines, and the most extraordinary results are reported by such medication in pathology which experience has shown could not possibly have been in the least influenced thereby. The same statement applies with equal force to the various sera, and also the so-called phylacogens. The employment of stock or autogenous vaccines and phylacogens has become so general in certain quarters that rational therapy has been practically discontinued. While it is admitted that in some instances these newer forms of medication may be beneficial, their routine employment must be considered as irrational.

It has been tritely remarked that a little medical education is a most dangerous thing. The layman has recently acquired much therapeutic misinformation, due to the unwise exploitation of certain fads and falla-

cies. For instance, I have had patients consult me for ordinary coryza and insist that vaccine be administered, having been told that this method of treatment was specific! Medical practitioners and manufacturers of pharmaceutical specialties have promised too much from this form of medication.

In common with other practitioners the writer has oftentimes given vaccines, especially the autogenous variety, but it is doubtful whether any real benefit has followed their use. I have about arrived at the conclusion that vaccines have little or nothing to do with the actual cure of disease, that it is the regime, the regulation of diet, and the rational medication given at the same time which is beneficial. I am sure the greatest good in vaccine treatment comes from its psychological effect; and if this be true it would be unwise for us as internists to deery its use entirely; but I wish to emphasize and insist upon other treatment besides merely the injection of vaccine. Some of the men who fathered vaccine therapy in its infancy, and claimed for it marvelous results in the cure of Hodgkin's disease and other affections, have now abandoned vaccine entirely and admit the benefit derived in the treatment of these diseases came through rational treatment with the occasional addition of X-ray therapy.

The laity has gained other erroneous impressions during the present campaign of education. Because one man has arthritis which he was told was presumably due to tonsillar disease, another is impressed with the fact that unless his tonsils are immediately extirpated when he develops painful joints, or if his doctor does not advise such an operation, that his case is not being given the proper consideration! Another may have similar views about the effects of so-called "intestinal stasis or dental caries; and another thinks he has gastric ulcer because he knows something about the symptoms, and believes that immediate operation is imperative.

The education of the people in regard to focal infections has resulted in the indiscriminate extraction of presumably diseased teeth. It seems certain that in some instances good has come from the removal of local sources of contamination, but the layman has come to believe that no matter how chronic his disease may be in every instance some part of the human organism is at fault, and that if this can be removed a cure will result. I agree that in every case where focal infection is known to exist and where it seems the patient can be improved by its removal, that by all means this should be done; but I still insist this must be followed by rational therapy, which to my mind consists of proper regime, diet, hygiene, and the administration

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of such drugs as may be indicated by the case in point.

I may say along this line that the layman has gained much false knowledge about the treatment of syphilis by the introduction of salvarsan. It is the common impression that in salvarsan we have a specific. The same condition exists in the treatment of syphilis with salvarsan as in the giving of vaccine and the removal of focal infection; it is not a specific and is only worth while when followed by the use of mercury and the iodides. With all these truths, why then do we complain because many of our patients become scientists, etc.

There has also been disseminated much misinformation in regard to uncertain and indefinite symptoms or lesions designated as pre-cancerous, pre-ulcer, pre-tuberculous, pre-eclampsia, etc., and the laity has thus been caused much unnecessary worry and discomfort. Even the physician seems to have forgotten that the prefix "prae" merely signifies something which existed prior to the development of pathology which may be present when the patient comes under observation, and when so used is distinctly dangerous. No one can possibly predetermine whether a benign lesion will eventually become malignant, and this statement applies regardless of the nature of the pathology.

It would seem to me an uncanny prophesy to be able to determine the "prae" stage of any of the diseases mentioned, and nothing but harm can come from advising the individual for or against operative intervention in that stage. It is true that human beings are heir to many ills, and while the internist with a perfect specimen before him might be able to say that in the distant future some disease might develop to which this particular individual is especially liable, yet clinically we know the unexpected frequently happens. In ignorance of his presumed predisposition the patient may live for many years in health and happiness, whereas otherwise he would be greatly disturbed mentally and I am sure this would contribute to the large class of neurasthenics, neuropaths and hypochondriacs that we see. I hope the statements some men seem prone to make, in professing to know what is going to happen in weeks, months or years, is not for personal gain; and it seems to me that the ultra-scientific physician is not the one who gets the best results, nor is he able to be regarded as the "Good Samaritan."

In a great many instances the importance of blood pressure has been overestimated, and patients have been caused distress and apprehension because they have been told their blood pressure is a few millimeters above what is presumed to be normal. It has been my experience that blood pressure is raised

in many instances by nervous excitation, by extreme physical exertion, or by some mental strain, shortly before the examination is made. In some instances I am sure our apparatus is at fault. When we have once made the diagnosis of "hypertension" and so informed the patient, we may expect the individual to worry about it as long as he lives. Such patients return again and again to have the examination repeated. It seems to me that until we know more about the real significance of a gradual rise in blood pressure, we ought not to unduly alarm the patient about his "hypertension." Moreover, the observation is pertinent that there is no normal blood pressure, and unless it is very high and accompanied by other evidence of disease, little importance should be attached to it. At the same time, I wish to admit that in my experience in both hospital and private practice, I do not recall a single instance where blood pressure of over 160 m.m. Hg., was not accompanied by some renal change.

It should be within the province of the internist to direct the dietetic treatment of his patients suffering from general diseases, and yet the specialist seems to think otherwise. I do not believe any individual can be kept upon an exclusive or severely restricted diet for any great length of time without detriment. Much harm has been done in the treatment of diabetes especially by the total elimination of carbohydrates from the dietary. I am sure that in many cases even though sugar be present in the urine, a reasonable amount of carbohydrates would be beneficial rather than detrimental. Of course, no one can gainsay the advantages of the Allen treatment of diabetes, yet its irrational employment may be attended by danger. It is probable that gradual elimination of carbohydrates from the dietary would not be detrimental in some instances. It would seem that internists have made the mistake of assuming that the manifestations of certain diseases are secondary rather than primary.

I wish to decry the unscientific practice of placing every symptom that arises at the door of the disease with which the patient happens to be afflicted. I am sure when the diabetic comes to us with gastro-enteric, thoracic or cardiac disturbance,—we are prone to attribute this as a sequel or complication of the previously existing disease. So it is with the nephritic, any symptom that arises is attributed to the condition of the kidney. We ought to consider in these cases the possibility or certainly the probability, of co-existing disease, and the patient ought to be given a thoroughly scientific physical examination followed by rational treatment of the symptoms as they arise.

It is noteworthy that many men have, so to speak, become specialists over-night, with-

out any especial training in that particular branch of medical science. Why should we as internists permit men of that character to direct the treatment of our patients? The field of the internist has been markedly restricted by the multiplication of the so-called specialists. The trend of modern medicine is toward specialism, and every specialist seems to think the general practitioner should merely perfect the diagnosis and then refer the patient to him! It is rare that the specialist refers the patient to the internist for information. I believe the internist is to blame in great part for this inequality in the practice of medicine. Those of us who are connected with medical colleges and give our time to the teaching of young men must assume the attitude of being equal to those who are doing special lines of work; we must insist that medicine is of equal if not greater importance than any of the specialties these young men may choose, and it is the choosing of a specialty that I am sure is part of every medical student's ambition,— unless he is willing to accept the role of the old-fashioned family physician.

It is irrational for men to announce themselves as specialists in some particular line, and then include in their work practically every disease with which patients who consult them happen to be suffering. For instance, genito-urinary specialists have been known to treat diabetes and all forms of nephritis; skin specialists treat dietary, renal, cardiac and other disturbances for the reason that skin lesions oftentimes appear during the course of such affections; they also treat the various focal infections, because pruritus or some insignificant skin lesion happens to be present. A great many patients with diseases which should be treated by internists are claimed by the gynecologist and the surgeon after the diagnosis has been made; and it is rare for such patients to be later returned to the internist for further observation and advice.

It seems to me if there could be a closer relationship and better understanding between the internist and the specialist our therapeutics could be made more rational and our results would be infinitely more favorable.

It is regretfully admitted that the internist has himself to blame for some of the irrational factors to which attention has been called, because he practices medicine the same way he did twenty years ago, i.e., he looks at the patient's tongue and feels the pulse, and with the information thus secured expects to make a diagnosis. Internists should be as scientific as their brother specialists, and when patients present themselves for diagnosis they should be thoroughly examined and every effort made by physical investigation, by anamnesis, by roentgenography, and

if necessary by the various laboratory tests, to arrive at a correct diagnosis; but certainly not all our patients should be referred to the specialist. The internist should not act merely as a "clearing house" for those who claim to specialize in medicine.

No practitioner of medicine has the right to insist that his patient be subjected to immediate surgical intervention, unless the existing pathology makes surgery imperative as a life-saving measure. I recall many instances in which patients followed the advice of the specialist and submitted to immediate operation where the pathology found failed to justify the procedure, and the ultimate results were unsatisfactory. In other instances the patients refused to be operated upon and ultimately recovered. I believe many mutilating surgical operations could be avoided if patients would persist in medical treatment for a sufficient length of time. Regardless of the brilliant work of the surgeon, which we all recognize and fully appreciate, the end results of surgery are not always more wonderful than may be achieved by medical treatment, and sometimes they are not so satisfactory.

While I do not wish to undervalue any advance which has been made in the practice of medicine, we appear to have lost sight of many valuable therapeutic agents for the cure of disease. In certain affections we have practically discarded all forms of drug treatment, and our practice has become irrational in consequence. We have fallen by the wayside and permitted ourselves to be dominated and controlled by manufacturing concerns exploiting proprietary remedies for the cure of every disease afflicting humankind. We are becoming too prone, immediately upon perfecting the diagnosis, to refer our patients to someone who claims to be a specialist in that particular line of work.

I believe we should return to the practice of rational medicine, and the art of prescription writing should be revived, not for proprietary preparations but for Galenical drugs. The diagnosis should be based upon clinical symptomatology, rather than solely upon laboratory and mechanical findings, and remedies then prescribed accordingly.

I do not wish to be understood as underestimating the value of laboratory and experimental investigations where the diagnosis is obscure, but the routine subjection of every patient suffering from some simple affection to intricate laboratory tests of various kinds, with examination of blood, urine, feces, etc., is irrational and unnecessary. Some one has said that "where laboratory findings disagree with clinical diagnosis, repeat the laboratory tests before proceeding with the treatment," in which I most heartily agree.

In the time allotted for this address I

could not possibly hope to consider all the disadvantages arising in the practice of internal medicine, nor could I enumerate all the fallacies that have arisen by faulty education of the layman. The purpose of this paper is to call a halt in the use of methods which have been exploited and promulgated by either a few faddists or by pharmaceutical houses. And I insist, although it may seem paradoxical, upon coming back to the treatment of disease by rational therapeutics. I am sure if we "put on our thinking cap" we will find in the pharmacopeia many drugs in their various forms and different methods of application which are valuable and will give us results we hope to achieve in the treatment of disease.

ORATION IN SURGERY

AMBROISE PARE AND THE SURGERY OF THE RENAISSANCE.*

By LIEUT. FREDERICK L. KOONTZ, M. R. C.
Louisville.

Ambroise Pare has been styled the father of modern surgery, and yet among English speaking people, and especially in America, he is little more than a word, a word well nigh meaningless on the lips of the student of medicine. The meager information is difficult of explanation when we finally come to a realization of the important place he took in science during the sixteenth century.

Almost forgotten during a period of nearly three hundred years, and with a dearth of English translations of the facts that have come to us through the researches of the French medical histories we account for the fact that the average medical student, and therefore the physician, has only a hazy conception, with none of the realization that Pare was a great surgeon, if not the greatest surgeon of all time. That he arrived at greatness through his own unaided effort, and that he left his imprint upon the science in no unmistakable manner soon becomes evident to the student of medical history. His work, if not his influence, is felt to-day. The American physician, if he be fairly well informed upon medical history, has in his possession a few salient facts about him, but the understanding and appreciation that comes with the knowledge of the man, seen in the light of his own atmosphere, with little touches of intimacy here and there is sadly lacking.

Few realize to what heights he hoisted himself through sheer force of ability and industry. Few realize to what really great heights he attained. It is only with a sketch of his

career, with special emphasis on the important events, with their significance to the world, that we may arrive at an estimate of the man. Few men, indeed, in this world have attained a prominence that made them an authority and their work a quoted text during a hundred years, who have not been done to the death by their biographers. Not so with Pare. The sum total of the American literature on Pare is contained in two short articles which appeared many years ago in the columns of two of our medical journals: *The Albany Medical Annals*, 1899; pages 480-485 apparently taken from a small volume by S. Paget, an English work; G. Putman & Sons, 1897.

The North American Medico-Chirurgical Review, by Samuel D. Gross, and reprinted in pamphlet by J. B. Lippincott & Company in 1861.

The various works on the history of medical science usually contain a short sketchy article, most of them dealing with the same facts and all inadequate to do him justice.

It has been with considerable difficulty that the present data has been obtained; necessitating the translation of sixteenth and seventeenth century French.

In order to arrive at any estimate of the man and his work, it is necessary to trace, more or less, the history of surgical science prior to his time, and to deal somewhat with his contemporaries.

After the achievements of the thirteenth century along medical lines, there appeared two centuries or more of decadence, during which the marvelous anticipations of the modern science was either suppressed or forgotten, only to reappear in the renaissance of the sixteenth century.

Pare would, in all probability rest in obscurity to-day, unknown, regardless of the really voluminous works written by him, which have lain for centuries in the dust of ancient libraries, had it not been for the action of the Medical Society of Bordeaux, who in 1812 offered a prize for an eulogy upon him. This was won by Dr. Vimont. This eulogy, while stimulating the revival of interest in Pare is, according to Malgaigne, meager and insufficient.

Among the early French historians, Moreri and Bayle have special articles in their dictionaries, and articles were consecrated to him by Percy and Laurent, and also by M. Villanme. *Researchs Bibliographiques, Historiques et Medicales Sur A Pare—Ephemeray*, 1837.

Much of my data has been translated from J. F. Malgaigne's magnificent edition of Pare published in Paris in 1840, and also from Kurt Sprengel's *Histori De La Medicine*.

*Delivered before the Kentucky State Medical Association, Louisville, November 6-9, 1917.

The author is in possession of a frontispiece engraving of Pare, which is perhaps one of the finest examples of the art of engraving on wood in existence. It was executed by the celebrated sculptor and artist, David. M. Malgaigne says that as librarian of the City of Paris he had access to some five or six engravings of Pare from which to choose, but learning quite by accident, that David was engaged on a statue of Pare, he persuaded him to undertake the work of reproducing the face of the statue in medallion. "This is far superior to the print which hangs in the print room of the British Museum."

It is well to call attention to the fact that with the advent of Pare, all Europe was in a position to receive him. In Germany, Paracelsus alone was distinguished, but at the beginning of the era that saw Pare, Paracelsus died in disgrace and poverty, leaving Germany destitute of a renowned surgeon. Italy was but little better off; England had no one, while in Spain there was not a renowned surgeon, until Holland gave her the great anatomist. Vesalius.

Alas, for the man of merit surrounded by the littleness of human jealousy. His life was made miserable by the snarling and snapping of the empyric non-entities with which the profession at that period seemed unusually accursed. His pre-eminence made him a shining target for all the shafts of sarcasm and invective that their little souls could invent. Notwithstanding this, he attained the highest pinnacle of glory and renown that has ever been occupied by a surgeon, before or since. Surgeon in Ordinary to Henry II., he became the First Surgeon to the King, successively of Francis II, Charles IX, Henry III, and Henry IV., dying in his eighty-second year after a life of ceaseless toil and accomplishment; a life full of danger and malice, under the handicap of a meager education, hemmed in by jealous empyricists; he hewed a path to greatness through an unknown tract; learning by observation, profiting by both his successes and failures, studious, always a fiend for work, and with an ability far in advance of his century, he went surely and straight to the goal of his destiny; leaving behind as a legacy his published works that were standard text books for a hundred years.

The dawn of surgery goes back pretty nearly to the ancients: Galen, Hippocrates and Celsus.

Indeed, when you once undertake to trace a social movement or a science back to its primitive radicals, you are unable to place your finger upon just the epoch, saying: thus we see the beginning, for there are always certain elements that ramify still further back. Thus, in tracing the history of the knowledge of the circulation of the blood, we

find that it culminated with Harvey, instead of beginning there. Harvey, himself, never claimed originality. Back through Shakespeare and Rabelais to Servetus, and on and on, until according to the Ebers Papyrus, a physician by the name of Nebseet, about 1600 B. C. wrote a treatise on the heart, wherein he described branches ramifying throughout the body and returning again to the heart, from which he argued that the heart, and therefore the soul, was disseminated throughout the entire body.

So, it is, that when you begin to trace back the beginning of surgery, it is difficult to find the end; but in certain epochs, certain men stand out as beacons to light the many geniuses on their way, and, strange to note, few indeed of them claim originality for themselves, but are ever ready, like the great men they are, to share the honor with some one preceding.

From 1200 to 1500 B. C. there are many facts to be noted each in its way bearing upon the subsequent development of the art of surgery.

It has taken many centuries of vicissitude to develop our art to its present status.

Not until the people

"Left off cracking crowns

And manufactured verbs and nouns"

do we see the science distributed among many and the general dissemination of surgical principles obtain.

There had come into the middle ages an inheritance of scientific thought, a revival of the doctrine of Hippocrates, Galen and Celsus which underwent a very remarkable development in the hands of a few men, notably William of Salicet, Guy de Chauliac, the School at Salerno and the Arabian Physicians, principally Avicenna.

While the influence of the church was unquestionably retarding the development of the science, we need not bother to discuss here whether there does or does not exist documents official and ecclesiastical promulgated to prevent the growth of science. The logical conclusion is that it was due to the general state of ignorance that existed generally in regard to medicine. We must remember that the science of theology was a well developed entity, and therefore must overshadow and tincture all else. The important thing for us is, that a few men devoted themselves to the study of medical science, and whether it was with the sanction of the church or without it, we are indebted to them.

The probability is, that there could not have been a very rapid spread of the science even without ecclesiastic check, for the teachers were few. Their subject matter was just seeing the dawn. We were, as you might say, at the beginning of things surgically; then,

too, the method of diffusing the information was very inadequate. Medical science had no powerful organization behind it; they had no traffic in books. To study, one must make long and expensive journeys to Salerno, Padua, Genoa, etc. The only way to secure a copy of any work in medicine was to copy it in longhand.

It is not to be marveled at that the educated clergy should be fascinated with and desire to dabble in the new science; nor is it wonderful to my mind that they interpreted it in the light of their acquired theology. As stated before, the important thing to the centuries following, was, that there did exist a few scientific minds that stood out as bright luminaries in the dark heavens of superstition and ignorance.

The Dark Ages before the renaissance abounded in miracles, which were multiplied into the middle ages. As patients were cured in the Temple of Aesculapius, so, in later centuries, were they cured by the Saints. Have we not authentic cures by the Jansenists at the Cemetery of Saint Menard; of the Russian Father Ivan at St. Petersburg, and by various Protestant sects and camp meetings? Have we not our own Christian Science? Many of these cures had a basis in fact, and though ninety per cent were not cured, yet there was more rejoicing and "claiming" made over the cure of one than of the ninety and nine failures.

It is a curious medical fact, but a fact nevertheless, that a really serious lesion will sometimes yield to profound emotion. We do not doubt that intense feeling or passion will produce almost superhuman strength.

Berdoo tells of a gouty man long hobbling on crutches who threw them away and ran when pursued by a bull. The lame and the halt, invalided and bedfast, will sometimes, unaided, get out of a burning building, and a man feeble with wasting disease will sometimes overpower an attendant while in a delirium.

The School of Alexander, under the first influence of the Egyptians, became saturated with mysticism, making a hodge-podge of medicine, miracles and devils. It was this dark fen into which the enlightenment of Hygieia glided, to be swallowed up in a darkness of occultism. The same thing happened in the Byzantine Empire of the east.

Out of this, in the early thirteenth century, came that clear-thinking, observant, William of Salicet. There persisted, however, clear into the seventeenth century the sinister diabolic causation of disease, and who shall say that there are not even traces of it to-day, and at that not symbolic?

Pare was not free from the superstition. In his writings he frequently refers to the mal-influence of devils, and his belief in the extra-

ordinary and the marvelous led him to make some extremely curious statements. Especially is this true in his section on monsters, where he cites an Italian woman who gave birth to twenty children at two births, nine at the first and eleven at the second. He relates further of the Countess Virbostans, who, at one accouchment, produced thirty-five living children.

It was a well-grounded superstition that in case of murder the picture of the murderer was indelibly imprinted upon the retina of the murdered.

From Guy de Chauliac to Ambroise Pare the science was befogged with satanic interference and superstition. In the time of Pare, there was a certain cross issued for a consideration, upon which was the following inscription:

"He who kisses it is preserved for seven days from falling sickness, apoplexy and sudden death."

There has long been going on a controversy between opposing authorities for and against the interference of the church.

James J. Walsh contends that there never was a Papal Bull forbidding dissections, and, that the decree of Pope Boniface VIII against cutting flesh from the bones, was the outcome of a certain custom inaugurated during the Crusades of taking portions of the body of a crusader, who had succumbed on the way, and carrying it back as a relic to friends and family, and, further, that the edict was a sanitary measure and one of enlightenment.

We have no less an authority than Froissart for the story that Robert Bruce, King of Scotland, commanded Douglas that he should, after the King's death, take out his (the King's) heart and carry it to the Holy City, and that Douglas undertook the commission; but, en route, his natural love for a fight led him into Spain where he lost both the relic and his life. On the other side of the controversy, Andrew D. White points out very clearly that no matter what the original intention was, it became the accepted doctrine that the church opposed it, and that it was this general acceptance which caused the trouble. Both authorities are doubtless right in some particulars. My own researches have taught me, however, that the important thing is that dissection went on, whether it was interdicted by the church or not.

Michael Angelo made dissections almost under the nose of the Pope. "He had arrangements made to bring bodies to a room in the convent of Santo Spirito, where he made many dissections."

I am impressed with the fact that all down the ages from the time of Mondinus, a professor at Bologna early in the fourteenth century, to Ambroise Pare, dissections were made somehow and where. In many instances the

details have been recovered by the search and re-publication of ancient and lost volumes.

That there should be an abhorrence of dissection of a dead body seems to my mind a very natural conclusion, regardless of any influence that the church might have had on the practice, especially in the beginning. After a thousand years, during which people had been taught to abhor the person who handled dead bodies, you are not going to improve their social status very rapidly. The lowest of the low, the vilest of the vile, the abhorred of all human beings was the embalmer or Parashites of Egypt:—denied all social intercourse with others, they lived outcasts and segregated; and yet their work remains today one of the imperishable monuments of Egypt.

After centuries of such prejudice, small wonder that medical and especially anatomical science should have a hard and long battle for very existence. And yet nations hacked the living body to pieces in all ages with apparent relish while exercising the art of war.

For ten centuries the art of surgery was held in much the same contempt as the practice of embalming, and the surgeon had but little better social status than the parashites.

It was not until 1406 when the Emperor of Germany issued a decree that surgery should no longer be held in dishonor, that the surgical profession began to take on any semblance of respectability. During the fifteenth century the surgeons began to contend for their rights. The outcome of this naturally was a separation of the barbers and the surgeons. This parting of the ways came when the faculty of the Ecole de Paris petitioned that only those students of the university that qualified should be eligible to internships in the Hotel Dieu.

This meant, of course, loss of opportunity and finally put an end to the barber-surgeons. Ambroise Pare was about the last intern to come up from a barber's apprentice.

It should be borne in mind, that if, for any reason, the Christians were either disinclined or discouraged from scientific pursuits, that the Jew and Mohammedan were independent and not under such control, and consequently they were untrammelled in their studies which, as layman, took to medicine.

This was, indeed, a very fortunate thing for succeeding ages, for the Jew, especially, built up a great school at Salerno in the tenth century. He built up a remarkable fabric of sanitation and hygiene, sciences that were probably developed by the ancient Egyptians and transmitted to the Jewish school through the Books of Moses.

The Jew preserved from the Alexandrian

Library much that would have been otherwise lost to the world. Modern medicine is much indebted to the Jew. Their energy in the study of medicine, their independence of the Christian church, and their natural acuteness made them much in demand as physicians. Even archbishops and popes consulted them even at a time when they must perforce be very secretive about it.

There is no doubt among modern writers that the School of Salerno was due entirely to the Jew. So broad was it that it was made up of laymen and conducted outside of the influence of Christian theology, and so broad in its principles, that even women were admitted as students.

The Jew, no less, and probably more than the Arab, was responsible for preserving much of the medical lore from destruction at Alexandria. Their natural investigating nature would lead them to the fountain head of learning, Alexandria, where they would not be content, without making copies of various works contained in the library, thus preserving much of our present knowledge of the ancients. The Jew has made himself a potent factor to the present day, and has at all times been an ornament to the profession.

Our present knowledge of the Arabian in medicine comes mostly from the Arab in Spain, where they flourished during the tenth and eleventh centuries. They were the great Polyglot Pharmacists. Some of their prescriptions covered page after page of ingredients and directions. The Arab practice was derived almost entirely from Hippocrates and Galen, and was intensely empiric. We should bear in mind, however, that Hippocrates and Galen had developed all that was worth while in medicine at their time, and it is to the everlasting credit of the Arab that he selected the best obtainable for his use. Had it not been so, Hippocrates and Galen would have been lost to the world.

The most important work of the Arab, however, was in chemistry and pharmacy. They furnished many anticipatory examples of the future science of chemistry, and indeed some of their work in pharmacy has lived to the present day.

The most distinguished among them during the eleventh century was Avicenna, who gave Europe a translation of Aristotle, and exercised a profound influence all over Europe during that century. Born in the Province of Bokhara, the last of the tenth century, he studied Hippocrates and Galen and, appropriating their teachings to himself, wrote some one hundred different short treatises on medicine. He was the Hippocrates of the Arabs, and his teachings became a standard text throughout Europe and were models for

*See George Ebers, Maspero and Sayce.

study at Paris and Montpellier until the end of the seventeenth century.

Galen, whose death appeared about 200 A. D. stood at the zenith of that marvelous Grecian culture that had no equal in the known world. All those causes that operated for the dissolution of the Byzantine Empire caused also a decline in the civilization of the times until, during the ensuing six or eight hundred years, it was lost, not only to the world, but to the Greeks themselves.

Then appeared a new luminary in the west, the foundation of the school at Alexandria, which flourished as the center of learning. Most probably all of the knowledge of the world was contained in the library at Alexandria. It is reasonable to suppose that records of the arts and sciences of the Greeks had been handed down through the few hundred intervening years, to which was added the results of centuries of marvelous work on the part of the Egyptians. Then came oblivion again, not by a slow corroding process, which might have permitted a great part of the knowledge to filter through the ages, but by one fell stroke.

This library was supposed to contain some seven thousand volumes in various languages. It was founded by Ptolemy Soter about 250 B. C., and fostered by them, surviving the fires in the siege by Julius Caesar, only to be eventually wiped out with the tragedy of Hypatia.

Ptolemy Philadelphus located the great library in an aristocratic part of the city, named Bruchion, to which various scientific institutions were added. The second Alexandrian library was established by Ptolemy Physcon in another part of the town at the Serapion. The library at Bruchion contained about four thousand volumes, and was burned during the siege by Julius Caesar, but that in the Serapion escaped.

Eumenes, King of Pergamus, had also established a library, and for a time a spirit of rivalry existed. In order to preserve their laurels, Ptolemy Epiphanes forbade the exportation of papyrus. Eumenes at once invented parchment.

To make amends for the destruction of the library at Bruchion, Mark Anthony purchased the library at Pergamus consisting of two hundred thousand volumes and presented it to Cleopatra. This library was then added to the one at the Serapion.

The Archbishop Theophilus at this time, about 440 A. D. was a bad man. He looked upon the Serapion as the abode of the works of the Devil. It contained the astronomical instruments with which Eratosthenes had measured the size of the earth, and Timochares had determined the motions of the planet Venus. Thus, it was a continual thorn

in the flesh of the bigot Theophilus. There was accordingly an order from the Emperor Theodosius for the dispersal of the library, entrusting the task to the swift and sure Theophilus. Then came the pillage and destruction of all the centuries of the Ptolemies. A little later, under saint Cyril, the nephew of Theophilus, came the crowning blow to science and philosophy, when the young and beautiful Hypatia, was attacked by a mob in the streets, and after her clothing was torn off, was dragged into church and killed with a club in the hands of Peter the Reader, after which the naked body was outraged, dismembered, and the flesh scraped from the bones with shells and thrown into the fire, thus ending the era of philosophy and science at Alexandria.

For the next two centuries Egypt was wrapped in a shroud of ignorance and superstition until an Arab came. The hideous fanaticism and barbarism into which Egypt had fallen was to be suppressed by a foreign invader. With the advent of the Saracen who was without theological controversy, came again the science which had formerly so glorified Alexandria.

Once more on the shores of the Red Sea a degree of the earth's surface was laid off and her size again estimated, but this time by a Mohammedan astronomer. On the heels of the Arab came the discovery of the motion of the Sun's apogee by Albatignius, and the third inequality of the moon; the variation antedating the same discovery in Europe six hundred years later by Tycho Brache.

The canal of the ancient Ptolemies from the Nile to the Red Sea was cleared of its sand, and the camel train became a familiar sight in the city.

The popular idea that the Alexandrian library was destroyed by the Saracen is in error. The Saracen invaders found nothing left of Alexandria's greatness and had to build it up again. All of my studies of the Saracen of that period make to my mind the idea preposterous. While zealous Mohammedans, they were educated and liberal on all lay questions. There were many physicians among them, and were excelled in that science probably only by the Jews.

From the advent of the Saracen in Egypt to the time of Pare, there are many isolated facts of interest to the student of medical science, and without any attempt to maintain chronological order, I wish to present some of the most interesting.

Hospitals: Hospitals for the care of the sick and injured date back to the first few years of the thirteenth century. The first one was established by Pope Innocent III. at Rome. This was the first institution recorded in history provided to take the place of the hos-

pitable home of the citizen. (This on the authority of Virchow). In the hospital the sick poor, strangers ill in the city, the injured in the streets, and emergencies of all kinds were cared for. The movement proved popular and spread all over the known world, until in the thirteenth century hospital construction and management had reached an advanced state that is very difficult for the physician of the twentieth century to appreciate. Their architectural form is in consonance with the great cathedrals, palaces and public buildings of the period.

One hospital established at Beaume by Nicholas Rolin, Chancellor of the Duke Burgundy, and under the control of Beguin Society is thus described in Heylts History of Religious Orders.

"It was built with much magnificence, with long wards, extending into a chapel, so that the sick could hear the services, and opening into square courts with galleries above and below. Patients of both sexes and of all ranks and degrees were received. There was one ward for the most seriously ill and back of all a house for the dead, with many lavatories and stone tables. In the upper galleries were suites of apartments for wealthy patients. The suites consisted of a bedroom, dressing room, ante-room and cabinet. They were richly furnished, and each person had three beds, that he might move from one to another. Each apartment had its own linens and utensils, and borrowed nothing from any other. In the middle wards patients of the middle class were received and in the lower galleries the poor. The rich had their own food and wine sent to them, but the Sister's nursing service was free. A stream of water ran through the courtyard and was carried in canals past every department for drainage. The atmosphere was always sweet and clean."

Compare this description with a hospital of the nineteenth century.

"The hospitals of cities were like prisons, with bare undecorated walls, little dark rooms, small windows where no sun could enter and dismal wards, where fifty to one hundred patients were crowded together, deprived of all the comforts and many of the necessities."

The ancient Hotel Dieu in Paris is still their city hospital.

During the thirteenth century many isolated facts should be noted, all of which has a bearing upon the subject under consideration.

Achilline noted the ductus communis cholecysticus and described the ileo-cecal valve. Beranger of Carpi corrected many of the mistakes of Mondino's Anatomy, the text that had been used from the beginning of the fourteenth century. He discovered the foramina in the sphenoid bone. He was the first to call attention to the vermiform appendix.

He also called attention to the fact that the thorax in woman is narrower and the pelvis broader than in man.

Canani noticed the valves in the veins, and Gabriel Zerbi noted the circular and oblique muscle fibres, the puncta lachrymale, the ligamentum uteri and other details that had escaped notice earlier.

Puschman's History of Medical Education says the Italian anatomists made dissections for themselves. The anatomical schools of Italy were the best in the world. The first anatomical amphitheater was at Salerno, and all of the great anatomists of the sixteenth century were educated there.

Neuberger says: "The Italian professors incited by the brilliant work of Mondino did not refuse to take in their own hands the anatomical scalpel."

There was unquestionably mutual assistance during the early days of the development of the science of anatomy between the physician and the artist. We see it in the remarkable illustrations by the masters who made the drawings for the anatomical texts.

Anent the controversy over the question of whether dissection was forbidden by Papal Bull, it is interesting to note that the one man who could have given a great impetus to the science of physiology and who had already made great strides in that direction should have been burned at the stake for heresy, not by papal order, but by John Calvin. I refer to Servetus.

Thomas Aquinas, teaching in the University of Paris about 1275, says:

"*Nihil omnino in nihilum redigetur*"—Nothing will ever be reduced to nothingness. Is this not the modern doctrine of indestructibility of matter anticipated some seven centuries?

As far back among the ancients as Aristotle, there was a difference recognized between prime matter and form, so that the division of substance into various alkaloids is by no means a new theory. Though radium may eventually pass into helium, it still is radium in substructure, and the principle in this seems to be as old as recorded history. Nor have we learned much more in regard to the "modus operandi." Thomas Aquinas also taught this theory.

Why, you may ask, is it that so much accomplishment on the part of the mediaevalists did not result in more rapid and particular development? It is insufficient in my opinion, to say that the church prevented it. It is better explained by the four fundamental grounds for universal ignorance formulated by Roger Bacon about 1280.

"(1) Trust in inadequate authority which led to acceptance of teaching by those least qualified to impart it.

"(2) The force of custom which causes us to accept unquestioning empirically what is both right and wrong.

"(3) The placing of confidence in inexperienced opinion, hero worship and fidelity to creed and sect.

"(4) Hiding one's ignorance under a display of superficial wisdom."

This stagnates individual ambition and development and hoodwinks the populace. It keeps them aloof from your own personal attainments. These four principles will go a long way toward explaining the backwardness of all scientific development, and the principle is no less potent to-day than it was seven hundred years ago, though perhaps not so universal in its application.

"We still make sheep walks of second, third and fourth hand information."

Roger Bacon (1214-1290) makes the almost uncanny prophecy long before gunpowder was introduced into Europe, though he was familiar with and had experimented with explosives, that:

"Art will construct instruments of navigation such that the largest vessel governed by a single man will traverse rivers and seas more rapidly than if they were filled with oarsmen. One may also make carriages which without the aid of any animal will run with remarkable swiftness."

This almost eight hundred years ago.

He taught also the principle of aberration of light and the rate of travel of light.

In about 1200 Albertus Magnus wrote some exceedingly pertinent remarks on the organic structures and physiology of plants. He was undoubtedly acquainted with the sleep of plants, periodic blooming, diminution of sap, distribution of vessels in leaves. He was familiar with the influence of sulphur vapor on red flowers, and he even made comment on germination.

During the thirteenth century universities loaned their professors to universities of other nations—a practice so modern that at the outbreak of the present world war American Universities had professors borrowed from and loaned to German and other institutions.

Caesalpinus, an Italian, a generation before Harvey knew all about the circulation of the blood.

Shakespeare put into the mouth of Brutus these words:

"Yes, you are my true and honorable wife, as dear to me as the ruddy drops that visit this sad heart."

From Rabelais we read:

"The rivulet of gold which is received with such joy by all the organs because it is their sole restorative (and this antedates Harvey many years) the spleen draweth from the blood its terrestrial parts, the bottle of the

gall subtracts its choler. In the right side, the ventricle, it is brought to perfection and through all the veins is sent to all the members."—(1496-1553).

Of the anatomists of the renaissance, Oliver Wendell Holmes said:

"They gathered in the rich harvest of discovery, like the harvesters in a grain field. After them in the next century came the gleaners who found many scattered precious grains of knowledge that their predecessors, with their rich harvest to care for, had neglected. Finally in the later times came into the field the geese who found here and there a grain of knowledge, missed even by the gleaners and who made a great cackling whenever they found one."

One of the most surprising facts to the modern student of medical history is the requirements for the practice of medicine in Paris seven hundred years ago. Three years of preliminary work at the University, four years in the medical school, special courses in surgery if the practice was to be in that department, and a year's experience with a physician before personal practice upon one's own responsibility was allowed, and then before being granted a medical degree from the University they must pass a final examination, after which, if successful, they were entitled to wear the long robe." And yet, from this high state, in two centuries it was possible for a barber to become a practitioner without the aid of the faculty. In 1449 the medical faculty at Paris required that the graduates should diligently visit the hospitals and accompany a skillful practitioner in his visits to patients and make notes of his cases. Some of these notes are preserved even to the present day in Paris. The faculty refused to grant license when this rule was broken.

In the time of Pare printing had been introduced and all the classics had been printed and distributed. The first medical book printed was "A Purgative Calendar" printed by Gutenberg in 1457,—being a series of dates upon which purgatives should be taken.

Just prior to Pare, Paracelsus, that strange and brilliant mixture of pure science and Charlatanism was a stumbling block to the internists who practiced empirically the doctrines of the ancients. He made pretensions to the analysis of water, and really did get to the iron content of chalybeate waters with gallic acid tests. He detected other substances also.

The urine was taken into account during the middle ages, and the idea of autointoxication was constantly recurring in the studies of the period.

At the beginning of the fifteenth century three men, Montagnana, Savonarola, and Arcolani, observed many lesions in the human body discovered at dissection. Thus we have

the origin of pathology. Soon were reported gall stones, apoplexia and a large number and variety of pathological lesions.

Benedetti deliberately opened bodies, dead from disease, to get at the cause of death before either Vesalius or Eustachi.

Columbus in Rome, an assistant of Vesalius, made many postmortems even on high ecclesiasties in order to determine the cause of death. By the middle of the sixteenth century, some of the pathological findings were as follows: Calculus, biliary, salivary, intestinal and all others, pneumonia, ulcers of the stomach, inflammation of abdominal organs, aneurism, calculi in the lungs, purulent conditions of the ureters and kidneys and ergotism.

One tabulator alone recorded over one hundred lesions with autopsies to prove.

Fracastorius gave a remarkably clear statement of contagion and infection and a little later Boyle said that some one would discover the cause of fermentation, and thus throw light on the causation of disease. He interpreted fossils in their true light and referred to the magnetic poles of the earth.

To any one who imagines that the subject of arthritis is new, need only read from Ambroise Pare his chapter on gout. We have not improved upon Pare on gout and rheumatism even to this day.

SANITATION AND PUBLIC HYGIENE

Sanitation as a science is not modern, though we hear a great deal about it in these latter days. A study of the subjects of sanitation traced back for the past one hundred years fades away however, in to almost nothingness. This is simply because the wonderful work that was started by the Egyptians and had a steady development up to the thirteenth century was lost entirely during the succeeding dark ages. A little review of some of the sanitary measures at that time is very refreshing.

In the middle ages it was forbidden the butchers of Paris to keep meat for sale more than two days in winter and more than thirty-six hours in summer. Hotel keepers were not allowed to kill their own meat because they were in a position to cook bad meat before selling. Meats, soups and vegetables could not be served in restaurants warmed over. The sale of fish was guarded by the most stringent regulations, and carrying heavy fines for violation. Butter and fish could not be sold in the same shop. It was forbidden to put coloring matter into or to mix old butter with new. Louis XII exercised stringent regulations for cleanliness over the spice mills. Likewise for bakers, thus anticipating our pure food laws. Yet all of these excellencies fell into oblivion and disuse during the decadent eighteenth and nineteenth centuries.

The students in the universities were required to follow the instructions of Erasmus. Hands were to be washed after each meal (it will be remembered that forks had not yet been invented. They first appeared in 1620). Nails were to be cut and cleaned each week. Gums and teeth were to be rubbed each day and various tooth powders were used. The feet and hair were to be washed each week.

In 1481 the Republic of Lucca in Italy elected three citizens to act as a board of health. They had ample authority to act in epidemics. The main purpose was to prevent spread of infectious diseases. They even kept in touch with foreign countries, and established quarantine regulations. This was true of many cities in Italy. Within a century after Columbus every principality in Italy had laws declaring tuberculosis contagious, and for the regulation of it.

It is interesting in this connection to note the words of Froissart probably among the first books ever printed. Froissart's work was the first recorded European history.

It was in speaking of the siege of the City of Lisbon in Portugal by the King of Castile in the year 1364 that Froissart uses the following remarkable language:

"I shall shewe you howe a pestylencee and mortalyte mervaylous ferefell fell in hys oost, in suche wyse that me dyed sodehynly, spekyng one to another;—there dyed mo then XXM persones; Whereof ye kyng was sore afrayd wherefore it was counsayled hym to depart thens And when the kyng of Castell dyslodged fro Lysbone the kyng of Portyngale caused all suche as were within the cyte to be armed and to lepe on their horses and to folowe the trayne of the Kyng of Castelles oost The Kyng of Portyngale made a crye that on payne of dethe, no ma to tayke ony thyng y founde in the felde nor to brynge ony thyng thereof in the Cyte but commanded every thyng to be brent to the extent that it sholde brynge no infeceyon in the Cyte. So, provysyon and every thyng of acontraymente was converted into flayme of fyre, so that not a syngele case in ma or woman appeared in y Cyte.

"The yere of our lord god MCCC.LXXX and III" (1364).

In order to save us from a natural and racial egotism be it remembered that centuries ago—in mediaeval as well as in ancient times many arts and sciences were developed to a point where, in comparison, we have nothing of which to boast.

That the culture of the ancients should have become lost, that the sanitation of the mediaevallists, that the medical education of the Parisians seven hundred years ago should all have become lost in the succeeding centuries is one of the great mysteries of the ages. We are just emerging from the morass.

As the Egyptians emerged from the reign of ignorance and superstition upon the invasion of the Saracen, after once having tasted the enlightenment of civilization and having enjoyed the distinction of being the seat of all the learning of the world; all of which had been lost to them in the destruction of the Alexandrian library; just as Greece and Italy lost their glory; so, Europe sank into the slough of blighting fog which obscured and blotted out the advancement of the thirteenth and fourteenth century.

WILLIAM OF SALICET.

In the latter half of the thirteenth century appeared William of Salicet, who, unlike Pare, had a liberal university training, but who also had Pare's ability to observe and deduce. His surgery contains many case reports and he, it was, who taught the great Englishman, Lanfrane.

He discovered that dropsy was due to durities rennm, (cirrhosis, or contracted kidney). There has been nothing added since but the detection of albumin in the urine. Where the Arabians abused the cautery he substituted the knife. He recognized the danger of neck wounds and sutured divided nerves. He describes suppurations of the hip and assigned chanere and phagedena to their proper causes. He taught that surgery could not be learned from books, but must be acquired by careful case notes and experience.

Salicet and Lanfrane conducted numerous experiments to secure primary union, but the profession took the wrong horn of the dilemma and went on record for "laudible pus" which suppurated on through the ages until Pare substituted asepsis for antisepsis two centuries later. From Pare's time, the profession took the wrong horn again and clung to it tenaciously until the appearance of Lister.

Salicet observed many sudden deaths after wounds in the neck, but did not get to "air embolism."

Lanfrane wrote a monograph on hand injuries that is a classic.

It will be observed that Pare found in his studies a few men previous to his time from whom he could acquire considerable advanced knowledge and from whom he could draw an inspiration that no doubt had something to do with fostering and developing his own great genius.

A most astonishing observation came toward the end of the thirteenth century when an English physician by the name of Gilbert, teaching at Montpellier, insisted that the rooms of patients suffering with smallpox should be hung entirely with red curtains, and that doors and windows should be hung with heavy red hangings. He claimed that this

made the disease run a lighter course and with a lessened mortality.

Note that at the end of the nineteenth century Finsen, the Danish scientist, won the Noble Prize of \$40,000.00 and that one of his most important observations was that the admission of only red light to the room of a smallpox patient modified the disease very materially, shortened its course, often prevented fever, and almost did away with disfigurement.

LIBRARIES AND PRINTING

The libraries of the Hotel Dieu and the Sarbonne in Paris were the first medical libraries ever collected.

In the early part of the fifteenth century the siege of Mayence by Adolphe of Nassau forced Gutenberg to abandon his printing work and seek sustenance in other cities of Europe, thus scattering the knowledge of the art and disseminating it through France, Germany, Italy, Spain, Portugal and England, until by the year 1467, there had been produced in Venice 2978 editions—in Rome 972 editions; at Paris 789 editions, and at Strassburgh 298 editions.

Celsus was the first to be found among the medical writers, and had the honor of being the first printed. Then followed Galen, printed at Florence in 1478. During the remainder of the century was reprinted at Milan and four editions appeared at Venice.

Antoine Benevienti, born at Florence, was the first pathological anatomist. Either himself or his brother, Jerome, published at Florence the result of their work. It was reprinted at Paris.

Though claimed by Kurt Sprengel, Maligne in his introduction to Ambroise Pare gives to Benevienti the credit for the first lithotripsy.

"C'est en realite un exemple tres authentique, et le premier annu sans aucun doute de la lithotrite pratique avec success."

He also rescribed "*Mal de France*" (syphilis). He also describes various kinds of hernias.

"I'lla content avec une lame de fer supportee par un cercle de fer, premier mention d'un bandage metallique applique a ces sortes de hernias."

This is the first mention of what is modernly known as a truss. This was very much elaborated upon by Pare.

In 1648, John Evelyn had tables of arteries and veins, which he caused to be drawn from several human bodies at Padua. These charts were afterwards presented to the Royal Academy of London. While in Padua, he tells us, in his diary, that he witnessed the operation of "Cutting for Stone" on a boy of eight, and that he bore the operation

with much fortitude and exhibited great delight at seeing the stone.

The Hotel Dieu, the municipal hospital of Paris, was originally founded by the Bishop of Liendry in the year 660, and has thus to the present time had a continuous existence of 1257 years. Many of the early records and case notes are still in existence and preserved in the archives of the hospital.

In 1268 Saint Louis established a college of surgeons at Paris, both in honor of Saint Cosme and on account of the excellent work done by the surgeons of the Crusades.

Examinations were conducted for entrance, but the barber servants of the priests were denied, hence gradually arose the two orders, the Licentiates of the College of Saint Cosme or the Master Surgeons, and the Barber Surgeons. This distinction continued until 1655, when they were incorporated into one college. This was the end of the strife between the Barber and University students that had continued for 150 years. There were still some limitations whereby the barbers should not assume the title of licentiates, bachelors or professors, nor were they permitted to wear the honorable cap and gown.

When a student qualified from the college, he presented his principal teacher with a red cap, and his fellow students with gloves.

There was another distinction: The physicians of the long robe and the physicians of the short robe, the long robe being the dignitaries.

Physicians all over Europe were in the habit of wearing the peculiar garb; visiting patients on a mule and "concealing their ignorance in bad Latin or descending to the vernacular (French) mixing it up with such jargon of scholastic phrases and scientific technics as to render it perfectly unintelligible to vulgar ears." This custom continued until past the middle of the seventeenth century when the sarcasm of Moliere hastened its abandonment on the continent. In Britain the wig and the gold headed cane lasted much longer.

It is in the memory of men practicing medicine in the State of Kentucky at the present day that a distinguished member of our profession appeared upon the platform of the old Masonic Theatre in Louisville, Kentucky, to deliver an address to the profession, assembled on a hot night in Prince Albert coats and silk hats. The thread of his discourse was at first lost, due to the shock to their nervous sensibilities when the lecturer stepped upon the platform with a loud checked, sack, business suit on.

PARE, THE MAN.

Fifty years after the printing of books was begun by that great genius, Gutenberg; less than twenty years after the discovery of

America; while Martin Luther was in the midst of the Reformation; while Aristo was giving to the world the Legends of Charlemagne, Erasmus teaching his pupils personal hygiene and acting as press agent for the bombastic Paracelsus; and while Copernicus was studying the heavenly bodies; without, however, a distinguished surgeon at the moment alive in Europe was born Ambroise Pare.

Born at Laval in the year 1509, of poor parentage, he was early placed in the care of a priest to learn Latin. In the language of Pare, he learned the tongue of science by cultivating the garden and taking care of the mule of the priest. Consequently, he was ever afterward handicapped by the lack of knowledge of the Latin tongue, and must needs write, for write he did voluminously, in the vernacular or French tongue, which, at the time, was only colloquial and despised by the learned.

Pare soon ran away from such unpleasant surroundings and attached himself to a barber surgeon in Laval by the name of Vialot, where he assisted in making lances, in bleeding patients and hanging out the bloody rag as a sign.

The original of the barber pole is correctly given as follows: A staff or stick was used with which to twist the bandage about the arm in order to constrict the superficial blood vessels. In the process of bleeding, the rag inevitably became stained with blood. As soon as the operation was over, the assistant tied the rag to the staff and hung it outside to notify the public that the barber was ready for the next patient, so that it became the sign for the barber surgeon from which we have inherited the red and white striped pole of the barber.

It was in Laval that his early ambition was fired by witnessing an operation for stone (Operation de Taille) performed by Colet. This caused him to abandon the blood-letting of the barber and to seek Paris. He soon became a pupil and assistant to Goupil, a professor in the College of France.

It was here that his life was very hard. He tells of his inability to sleep from overwork and overstudy. His work in both the in and out patient department, however, won him early recognition, and his indefatigable labors in operating and dissecting—for dissecting he did constantly, as we learn from his reply late in life to Gourmelin.

He studied Galen, Jean de Vigo, Guy d'Chauliac and Lanfranc, and rose steadily until he became Director of the Hotel Dieu at Paris. After about three years, he resigned to accept a commission as Surgeon to Colonel General Rene Montjean in the Artillery, and accompanied Francis I on his ill fated expe-

dition to Italy in his campaign against the Emperor Charles V.

After the surrender at Turin, Pare returned to Paris and took up the practice. At the time the only text on anatomy was Mondino, grossly inaccurate. The only surgical works were Guy d'Chauliac, Jean de Vigo and Lanfranc. Midwifery was in the hands of ignorant untrained women. The Arabian polypharmacy was the rule. These various defects were all well understood by Pare, who set out to change the order of things. His great powers of observation, his deep study, his greedy ear for all scientific discourse soon began to bear fruit. Enemies, however, began to spring up, who caused him a great deal of annoyance. Pare's thought, his teaching and his practice, from the very beginning were revolutionary, though based upon sound principles acquired from his habit of observation and experiment.

In 1552 he was appointed Surgeon in Ordinary to Henry II, whom he followed in all his various military campaigns. This methodical man organized a competent medical military service. It was his custom to visit every man of note in every country visited, and extract such information as was to be had. His knowledge of medicine and surgery became very great. He was a man of marvelous memory, and his pre-eminence became apparent early in life.

It is about the life of Henry II that the most fascinating bit of medical history and romance centers. The story starts back in the reign of Francis I. The French King was anxious for an alliance with Pope Clement VII, against the Emperor Charles V. The crafty politician that the Pope was caused him to propose a marriage between his niece, Catherine, a grand daughter of Lorenzo, The Magnificent, and Louis, the Dauphin of France.

This was, of course, impossible for the French King in as much as Catherine's father was a tradesman and banker of Florence, and whose estates had been plundered by the enemy and Catherine, then a girl of twelve or thirteen, ordered given over to the army as common property. This fate for her, however, was prevented by her uncle, the Pope, who took her under his protection.

Francis I. knew the French people would never stand for such a mesalliance. Unwilling to lose the opportunity, however, the foxy King proposed that he give, not Louis, but his second son, Henry, in marriage to Catherine knowing that he was incapable of begetting issue, due to a developmental defect. This, it seems was known to the Pope, who accepted the substitution. It is related by Brantome that Catherine also learned of it, and was in tears when an uncle remarked that any clever woman could have children.

The wedding was solemnized amidst great magnificance.

Now, there had been in the service of Charles V one Count Montecoculli, who had been supposed to enjoy the confidence of Charles V., though outwardly dismissed in disgrace. He became attached to the Dauphin in the capacity of cup bearer. Shortly afterward, while on a hunting trip, the Dauphin, after a violent game of tennis, called for a drink of water. The Count went to a well and secured a glass. The Dauphin drank it and almost at once became violently ill, dying soon afterward from the effects of poison. Henry II, married to Catherine, now became the Dauphin. He was greatly enamored of a widow, the beautiful Diana de Poitiers. For ten years neither the Queen, nor Diana became pregnant. The Queen, whatever else may be said about her, appears to have lived a chaste life, and Diana was at the menopause.

The explanation of this condition is given by Balzac as due to the physical defect in the King.

An operation was now performed upon the King, the details of which is unfortunately lost. It is not absolutely certain even that Pare performed it, though in the light of the subsequent affection exhibited for him by the Royal Party, it is more than reasonable to presume that he was the surgeon. Then, too, he stood alone as the great plastic surgeon of his day. Fernel, who was the Court Physician, was not distinguished as a surgeon, and Vesalius was in Spain. Reasoning from all attending circumstances, my conclusion is that he must have had either an epi or an hypo spadias. History is clear that a surgical operation was made upon the King. Note the result. Catherine at once became pregnant, and bore a child every year for ten years, and miscarried on the eleventh, when the King died. This gave to France, Francis II, Henry II, Charles IX, Elizabeth, Queen of Spain, and Margaret Queen of Navarre, wife of Henry IV, afterward King of France. Truly a wonderful piece of plastic surgery.

At the death of Henry II, the surgical and medical treatment was interesting in the extreme. His injury was caused by a javelin that had penetrated the socket of the eye and had broken off. The King was not at Paris at the time, and the case was under the immediate care of Fernel, Physician to the King, who chose to call Vesalius in consultation, rather than Pare.

The remarkable thing about the procedure was that they measured the length of the broken shaft and estimated how long a piece must have been driven into the skull. Next they took six criminals, one after another, who had been condemned to death, executed them, set them up for targets and knights mounting their horses rode at them burying

the lance into the eye socket and then breaking them off, in order to determine the extent of local injury. Meantime, the King was lying unconscious with a piece of wood still in his brain. After they had apparently determined to their own satisfaction they dared not attempt to remove it for fear of the charge of Regicide in case the King should die in the operation.

Henry was succeeded by Francis II, a weak youth who married at an early age the beautiful Mary, Queen of Scots. He lived about eighteen months. At his death we find Pare in perhaps the most remarkable experience of his career.

The novelist Balzac has tintured the incident in his best romantic style.

The King had a pain in the head which defied all treatment. The story of Balzac relates of a visit of M. LeCamus to the apartment of Pare after midnight, the night before the King's death, where he found him with a light burning, contrary to law at that hour, and engaged in making measurements upon a human skull. Pare had made a diagnosis of acute mastoiditis which was undoubtedly correct, and proposed to trephine the skull to permit the escape of pus. At the consultation the next morning, his confreres refused to concur either in the diagnosis or in the treatment as outlined by Pare. Upon formal vote, they rejected his plan and instead gave the King an injection in the ear.

Before this time Pare had cured a wound to the median nerve sustained by Charles IX, incurred at blood letting and which had resulted in paralysis of the median distribution. Just what was done, I am unable to state, other than the fact that his result was so brilliant that Charles IX. made him First Surgeon to the King. I do know, however, that Pare did a great deal of work in suturing and transplanting nerves.

He was the first to lance the gums in difficult dentition, practicing the operation upon his own infant daughter. He operated for hair lip, and extracted cartilaginous concretions from the knee joint. He devised the method of reducing dislocation of the shoulder joint by putting his foot in the armpit and making traction on the arm. He was a warm advocate of the bandage, and was the originator of the "Bandage Expulsatif." He invented what is now known as the Heys Saw, and the mechanical treatment of club feet.

His work of delineating artificial arms, legs, eyes, noses and ears shows a wide range of plastic and mechanical knowledge. The author possesses an illustration by Pare of a mechanical arm and hand where the elbow joints, the wrist, and all of the fingers are capable of movement. He discovered, by ac-

cident, that a child with a cleft palate could talk and swallow when a spoon was placed in its mouth. This led him immediately to invent the metallic obturator. His improvements of the trephine gave the world an instrument that they carelessly lost, but an enterprising mechanic has re-invented and sells it to us under a royalty at \$40.00 per trephine.

It is generally understood that Pare invented the use of the ligature. This is not strictly true. What Pare actually did was to invent a needle with a triangular point carrying an eye with which he could carry a ligature close about the wall of a blood vessel without fear of the ligature slipping. Before this time ligatures had been used only as a tourniquet, tying off tissue en masse causing gangrene and secondary hemorrhage. It was Pare who made the proper application and reduced it to a surgical procedure.

It was at the siege of Metz that on one occasion his supply of boiling oil was exhausted. In consequence he was obliged to cleanse the wounds with water. In great despair the wounded gave themselves up for lost—but slept comfortably instead, and to Pare's utter astonishment he found them in the morning in better condition than he did those whose poisoned and burned bullet wounds were treated with boiling oil.

Pare here demonstrated his great power of observation and application. He at once substituted cleansing of the wound for the use of boiling oil. The oil was used not only for cauterization, but in the belief that the hot oil destroyed the poison that the bullet was supposed to carry. It had been the popular idea that bullets fired from a gun were red hot from frictional heat and burned the flesh along the tract of the bullet. This erroneous idea was exploded by Pare by firing balls into bags of gunpowder, finding that the powder did not explode.

He carefully sought out the ends of divided tendons and sutured them. He taught that no portion of the tongue should be removed for he observed that wounds of that organ always healed perfectly, if carefully sutured. He cut the Uvula with a slowly acting snare.

His orthopedic armamentarium was immense. He used specially designed shoes and bandages for club foot. He soaked the parts long in water and then over-corrected them. He made special shoes for the correction of flat foot. He invented a corset made of metal with holes in it for ventilation. It contained adjustable padded plates for the correction of spinal deformities. He practiced resection for joint ankylosis with deformity. He taught that Genu valgus and club foot were due to similar causes. He invented instruments for raising depressed bone, and for removing fragments. The remote effects of

brain injury: Dementia, deafness, and the various paralyses were carefully studied and understood by him. The whole subject of transfusion of blood was given attention at that time. Magnus Regelius suggested that the artery of one patient be fastened directly to the artery of another in order to bring about transfusion. The method was used by a large number of men in severe losses of blood. In 1539 Benedictus noted the occurrence of Hemophilia. This had been previously discovered in the Middle Ages, but had been lost sight of.

Pare used posture and bandages as well as excision for varicose veins. He was the first to use the starch bandage.

Vidius invented gold and silver tubes to be used in tracheotomy. Montaux invented a magnet for the extraction of particles of iron from the throat. All of the specialties were well developed at this time.

In 1500, Jacob Nuffer, a veterinarian performed Cæsarean Section successfully on his own wife. Others followed his example, and by 1550 Rousset had operated for Cæsarean section fifteen times.

A Dutch surgeon, Weyer, wrote a text book on Gynecology. Cabral advised the removal of the breast for cancer and with it, a part of the pectoral muscles. He pointed out that wounds of the heart were not necessarily fatal. Della Croce emptied pus out of the chest by aspiration. Pare drained empyema by incision low down in the chest. Diolanus explained Ileus; described it and outlined its treatment, and nothing has been added since.

Pare punctured the intestines to let the gas out before replacing a distended viscus. Fiori-Vanti reported a case of splenectomy with recovery. Pare invented all sorts of bougies for the treatment of strictures, and Savonarola suggested the extirpation of ranula as the only way to cure it. Just a little later than this period Beranger of Carpi described fracture by contre-coup and reported cases of extirpation uteri for proeidemia. He also developed a technique for the inunction of mercury in syphilis.

The Brancas, father and son, practiced rhinoplasty. Pare operated on nearly every kind of defect amenable to plastic surgery. He cured defects of the lids, lips and nose by slipping tissue from the forehead and the face.

Recently, a discovery has been made of a work on surgery by Hugo von Pfalspeundt in which he gives a description of a silver tube with flanges to be inserted in the intestines when severed. The ends being carefully brought together over it and allowed to remain in situ. One of the late mediæval surgeons had used the trachea of an ox over which the intestines were sutured. This be-

came disintegrated after a while, but remained long enough to serve its purpose.

Pare maintained to have observed that insects and other animals uniformly spread infection.

"Pare pretend avoir remarque que les insectes et d'autres animaux propagent également l'infection."

Pare also recommended camphor as an excellent remedy against putridity.

While studying the plague at Bayonne, Pare saw all die of the plague who had been bled. He said that bleeding in that condition was objectionable.

Ambroise Pare was tall and slender, with a countenance grave and of an extremely pious nature. It was his custom always to pray for the success of his operation. This phase of his character is well illustrated by two incidents. Upon the occasion of one of the numerous military campaigns a party set out to make an attack upon a church, but they were severely defeated. A servant of M. Rohans was severely wounded with sabre cuts. He was so severely wounded that it was expected he would die. Orders were given for his burial, when Pare begged the privilege of taking him under his personal care. In the words of Pare, "I did him the office of physician, apothecary, surgeon, and cook. I dressed him to the end of his case and God healed him."

The other incident occurred at the siege of Hedin, in 1553. There were a great many women following the army, who were a constant source of annoyance and irritation to Pare. Upon one occasion, while out on a sortie with a Captain of Artillery, he espied some fifteen or twenty women congregated at a well. He was so inflamed against them that he begged the Captain of Artillery to train his cannon upon them and fire. The Captain refused upon the ground that their destruction would not compensate for the wastage of ammunition. Pare insisted until finally the Captain fired, killing fifteen or sixteen of the women. This seems to be the only blot on the record of Pare.

Pare attended both rich and poor and made no distinction between Catholic and Huguenot. He was much beloved not only in Paris, but throughout France, and was known as The Good Old Man. He was kind and considerate, and of great assistance to the young surgeon. He was extremely industrious. From twenty eight to seventy-three he labored incessantly with his pen. He was a man of incorruptible character. At the siege of Hedin he was captured by the Spaniards, and during his captivity rendered great and faithful professional service to the enemy, but spurned the offer of a bribe made by emissaries of the Spanish King to induce him to enter his service. His reply also to Catherine de

Mediei is significant: "Madam, the idea that you could think me capable of such an act ought to make me weep for the rest of my days.

Pare had acquired a large cabinet of euries. Within it was a dissected and embalmed body, a double foetus, a uterine mole weighing ten pounds, an ostrich skeleton prepared and mounted by himself. His natural history collection came from Europe, Asia and Africa. His library was very extensive. He was rich. His salary as First Surgeon to the King was six hundred livres a year, and the sale of his books netted him a large income. He maintained a country house, where he spent his Sundays reading and writing. His name became a household word throughout France and poets and novelists have praised him, but he has been sadly neglected by the profession which he so brilliantly adorned.

His enemies persecuted him always. They even accused him of attempting the life of Henry III, when that monarch had a terrible siege of otalgia with delirium. It became necessary for him to prove that he had administered no remedy except in the presence of the Court Physicians.

His most vindictive enemy was Gourmelen, President of the College of France, later appointed to prosecute Pare in the Courts because he dared to publish his work on surgery, especially in condemning the use of the cautery against all the teachings of the ancients, without any authority, without knowledge, without experience, and without good sense, and substituting some methods of his own for tying arteries and veins. Gourmelen called Pare a bloodthirsty cruel rascal. Pare answered Gourmelen, as follows:

"You boast, my Gourmelen, that you would teach me my lesson in surgery and my operations, but in that I believe you are a little bit mistaken, for my education has been quite after another fashion. I have learned my art, not in my closet, no, nor by hearing the discourses of physicians, though that also I have not despised; but, in the Hotel Dieu where I lived for three years, seeing many diseases and practicing many operations upon the living body, and learning also much anatomy from dissections upon the dead; but, I have yet more to boast of for being called into the service of the King of France, I have in my time served four successive kings, having followed them in battles, skirmishes and assaults. Sometimes I have been in sieges, and sometimes shut up with the besieged curing their wounds, and last of all I have lived in this great and renowned City of Paris many long years where I thank God I have been held in some repute and ranked at least equal with my peers in so much that there have been few difficult or celebrated cures in which my head

and hand have not been employed. How, seeing these things, dare such a man as you, who have made surgery no part of your study, talk of teaching me."

At the siege of Metz when the Duke de Guise was sorely pressed by the Emperor Charles, short of food and his men dying by the hundreds from their wounds, he sent for Pare. They succeeded in bribing an Italian Captain, who conducted Pare laden down with medicines and instruments, into the city. The inspiration of Pare's mere presence was sufficient to change the whole morale of the forces. Then, too, almost immediately upon his arrival he did a successful trephining operation for a depressed fracture of the skull. So great was the confidence of the soldiers in Pare's ability to save them if they were sorely wounded, that they took up the fight with great recklessness. Charles' army on the other hand was dying of disease and injury, and was compelled to withdraw his forces which numbered all told a hundred thousand men. Thus was he defeated and the City of Metz saved by one surgeon.

It has always been a matter of much speculation that Ambroise Pare being a devoted Protestant, should survive the great massacre of St. Bartholomew. He was the only Protestant of any prominence in the world to escape. When such men as the Admiral Coligny were dragged about the streets of Paris by wild horses until their bodies were dismembered, you can readily appreciate that there was either a very strong tie of friendship, or that the services of Pare were of such importance to France that they could not spare him.

Brantome tells us that Pare was summoned to the bed chamber of the king upon the night of the massacre, and forbidden to leave the Palace. While that great massacre was in progress, during which, as variously estimated, from one to three hundred thousand men, women and children were murdered in France, the King led Pare to the window and told him that it was now time for him to renounce Protestantism and to go to mass. Pare, true to his character, made the following reply to the King:

"I doubt not, sire, that you will remember that when I took service with the King, that it was upon three conditions: First, that I should never be required to leave your service; second, that I would never be expected again to be present at a battle, and third, that you should never ask me to go to mass."

I know of no single instance in history that required more personal bravery than did that.

Among Pare's celebrated cases was the cure of the Duke de Guise, who had suffered a penetrating wound of the chest by a lance at the siege of Calais: the cure of the Admiral

Coligny who had been shot down in the street with two balls from an arquebus; the treatment of a fractured leg and the trephining of the skull for a fracture suffered by Catherine de Medici upon being thrown from a horse, the trephining of the King's officer at Metz and his diagnosis and proposed line of treatment for King Francis II.

Pare's written words consisted of "A Method of Treating Gunshot and Other Wounds, 1585," "Treatises on Anatomy and Surgery, 1575," and finally his completed works containing three wood cuts and published at a cost of three thousand livres, or \$750.00 present money. His works were translated in many editions, into German, Spanish, and Italian. Two editions only made their appearance in England, the last about 1669. These various translations were used as textbooks for over a hundred years, and even then Pare and his influence was so completely lost to the world that, when Napoleon Bonaparte appointed a commission with unlimited authority to investigate and attempt to locate some descendant of Pare, they found that all trace of the family had disappeared, and that his records were lost.

It has only been through the discoveries made by the few men who are industriously searching the old libraries of the continent and bringing the old facts of history once more to the light of day, that the world has any knowledge of Pare at all.

Notwithstanding his wonderful surgery in civil life, the greatest service to his beloved France was from Pare's military career. He followed the fortunes of four kings of France through their many campaigns; and God spared him in his country, in siege and in battle, for thirty-three years. (1536-1569).

The confidence inspired in the troops by his presence his really great skill, his natural resourcefulness, and his great fidelity to his country, kept more and better effectives at the front, and improved the morale of the army more than any other single surgeon that ever lived, not even accepting the great Larry.

He organized his medical service, in campaign, on a system far in advance of his century.

It is particularly appropriate at this time to stimulate the interest of the medical profession of America in the example of unselfish devotion to king and country, exhibited by that greatest of all military surgeons.

Let us adopt as a motto the words of Pare: "For the good of mankind and for the improvement and glory of surgery."

BOOKS AND AUTHORITIES CONSULTED.

Peyp's Diary;
Evelyn's Diary;
Froissart's Chronical;

"The Thirteenth the Greatest of Centuries," by James J. Walsch;

"The Century of Columbus,"—Walsch.

Albany Medical Annal 1897.

Ambroise Pare and His Time—Samuel D. Gross.

A History of the Warfare of Science with Theology, by Andrew D. White.

The Century of the Renaissance, by Batinol.

Mediaeval Towns—Padua, by Cesare Soligno.

Histoire de Medicin—by Kurt Sprengel.

Handbook of History of Medicine, by Puschman.

A History of Medicine, by Puschman.

Cambridge University Address, by Prof. Allbutt.

Memoirs Pierre de L'Etoile.

Curiosities of Medical Experience—Milligen.

Pathology of the Mind—Maudsley.

Handbook of Psychiatry—Kraft-Ebing.

Illustrations of the History of Medical Thought, by Reginald Lane Poole.

The Early Naturalists—Miall.

The Medici—Young.

Lorenzo Medici.

Introduction to the Life and Works of Ambroise Pare, by J. F. Malgaigne.

Dames Illustrious.—Brantome.

St. Beauvais.

Catherine de Medici.—Honore Balzac.

Obstetrics. A Text Book for the Use of Students and Practitioners—By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University, Obstetrician-in-Chief to the Johns Hopkins Hospital, Baltimore.

Fourth enlarged and revised edition, with seventeen plates and 685 illustrations. New York and London. D. Appleton and Company Publishers, 1917.

Readers of this Journal need no introduction to this fourth and latest edition of Williams' Obstetrics. The main changes from the preceding editions covers the following subjects, anatomical changes during menstruation, placentation, metabolism of pregnancy and the puerperium: Abderholder's pregnancy reaction, changes in the endocrine glands; nitrous oxid-oxygen anesthesia; physiology and anatomy of the third stage of labor: Cesarean section; the relation of syphilis to the generative process; etiology and treatment of abortion and premature labor, and many other changes. Minor changes have been made throughout.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago, Volume V, Number 6 (December 1916).—Octavo of 217 pages, 47 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Published Bi-Monthly. Price per year: Paper, \$8.00; Cloth, \$12.00.

This volume will be of especial interest to the admirers of the late Dr. John B. Murphy as it contains a photograph, a complete medical history and last illness of this famous surgeon, and honorary life member of the Kentucky Medical Association.

OFFICIAL ANNOUNCEMENTS

STATE CONFERENCE ON MEDICAL PREPAREDNESS AND HOSPITAL IMPROVEMENT.

The Conference was called to order November 6, 1917, at 6 P. M., by the President, Dr. Milton Board, Louisville, who said:

Ladies and Gentlemen: This is a special session given over for the purpose of a State Conference on Medical Preparedness and Hospital Improvement. There has been a Committee on Medical Preparedness in Kentucky for that purpose, the chairman of which is Captain J. G. Sherrill, Louisville, who will preside over this meeting.

Captain Sherrill, in taking the Chair said:

Mr. President, Ladies and Gentlemen: This evening we are going to take up a work which is of the greatest importance. The National Council on Medical Defense and the Council on Defense for the State of Kentucky, Medical Section, have been busily engaged in several lines of endeavor, the chief of which is to obtain enough medical men as volunteers to aid in the army work. In addition, the Army has put upon this committee, this council of defense for the state, the task of finding out how many hospitals we have, how many beds these hospitals will accommodate, and we are to get an idea of how all of these hospitals can handle any large emergencies which may arise. This data has been obtained and has been forwarded to the Surgeon-General. The Surgeon-General's office has on file the exact number of doctors within the state, men who are fitted for certain work at home, and the men who are eligible for service in the army.

The hospitals in the army are adequate perhaps for the work which they have been doing, but there will be additional work thrown upon them when the wounded return home from the war and need to be reconstructed, and a movement looking to the advancement of the care of patients in hospitals and the improvement thereof has been started by the American College of Surgeons, which is an organization of 4000 of the leading surgeons of America, and this body has appointed a committee for Kentucky, consisting of gentlemen from various parts of the state, and this committee is acting to-night. I was appointed chairman of that committee.

The object of this committee, the general committee appointed for the United States, is to standardize, first, the hospitals of the country, and the chief object is to get the hospitals all over the country to adopt the same standard system of equipment which will be recognized as necessary for the proper conduct of

a first class hospital. In order to carry out this plan, it will be necessary not only to have the endorsement of the medical profession but also of the lay public, and for that reason we have invited the medical profession of the state and persons who are greatly interested in hospital work throughout the state, and we hope to begin later on plans for the improvement of the hospitals throughout the state and throughout the United States. In this effort there will be no desire on the part of those interested to handicap the work of the smaller hospitals, and the interests of the smaller hospitals will be protected and cared for as much as possible at the same time the work in the larger hospitals is considered.

The first step in this task seems to be the development of some system of record keeping, whereby the records of the hospital can be kept in such a way that when you examine the records of one hospital you can compare them with those of another. This will look to the medical side, the financial side, and the general management of the hospital. It will be our effort to have, as near as possible, uniformity of records. The question of expenditure and how much per capita to take care of hospitals will also be considered. Because this work is in its infancy or beginning we are not entirely familiar with all the things that will be necessary.

We will consider in the course of our work the question of what is necessary to make a good hospital, and what relationship this hospital bears first to the patient, which is the chief and prime object of the hospital and, second, the relation which the hospital bears to medical progress and development of the art of medicine.

We do not propose that a hospital should be made an experimental station, or that a large amount of experimental work will be done, but there will be an effort to encourage the introduction of new and satisfactory methods of treatment. Therefore, the relationship between the hospital and the advancement of medical science will be very close. Hospitals are better in our opinion when they are teaching hospitals. Hospitals are much better perhaps if they have a closed staff. That is one important question for consideration, and the question will arise whether the staff shall be under the control of the institution and shall be a closed staff, or whether it shall be a public hospital and accept patients from all surgeons. This is to be decided in connection with this program. It will not be decided by any one man, but by the opinions of the majority of the people all over the country.

Again, the question of the hospital as a teaching institution and its connection with large universities will be considered.

There is no one more familiar with the work

in this line than Father Moulinier, of Milwaukee, Wisconsin, who has been connected with Marquette University for a number of years. He was, at first, on the Board of Regents, and at the present time he is President of the American Catholic Hospital Association, and it is with great pleasure that I present to you now Father Moulinier, of Milwaukee.

FATHER C. C. MOULINIER spoke as follows: "Duty of the Community to the Medical Profession":

I rise to address this audience with a great rise to address this audience with a great deal of misgiving. Your chairman has said there is no one who knows more about hospitals than I do. I should prefer to put it this way: There is no one who knows less about them than I do, and yet paradoxical as it may seem, I am willing to say something about them.

This whole question, ladies and gentlemen, is one of health. It is a national question. It is a question of the health of our nation; it is a question that will concern us for all the time that our nation shall exist. It is not merely an emergency question. Of course, any matter that concerns our nation to-day may be looked upon as a war question, may be looked upon as a preparedness question, and this matter of health, without which we cannot come to the question of hospitals, is to my mind the most important, the most pressing question there is to-day before our nation. It is not only how we are going to take care of the boys that are sent back to us maimed and shattered; it is a question as to how we are going to build up our nation in the matter of health from now on as we have not done in the past. We have the reputation of being the most wasteful nation on the face of the earth; but we have always thought of ourselves as a wasteful nation in the matter of natural resources—food, money, etc. We have not, however, I believe, until the present begun to realize that we were the most wasteful nation in the matter of our health that is now living on the face of the earth. I believe that those doctors who have had to do with the examining of the men that came under this first draft could tell us very startling things about the condition of health they found amongst our young men from the ages of 21 to 31.

Now, if it is true that we have been lacking in regard for our health as a nation, then the acute condition we find ourselves in now facing this war must bring to our minds the tremendous problem of a nation's health.

We have had Red Cross campaigns; we have had Liberty Bond campaigns, but we have not yet had a health campaign embracing the whole country. I do not hesitate a moment to say that before we have gone very

much farther in the war, there will be proclaimed a campaign for health throughout the nation. The matter of our health is one that runs backward and forward into our national life in a way that not only medical men seem now to appreciate, but I believe even the medical man has not yet realized the full reach of the question. The immediate movement that that has been instrumental in my coming here, and in which I have been particularly interested, is the standardization of hospitals, but you can never completely standardize hospitals until you standardize the public, until you standardize the medical profession, until you standardize the nurses, and until you standardize all those men concerned with the fundamental sciences that go to make up medicine. So I am going to say something about standardizing of the public.

My subject as it reads in the program is "The Responsibility of the Community to the Medical Profession." For the moment, let us think of ourselves as the public or the community, and did we ever really seriously think that we had any responsibility towards the medical profession? Were we not always inclined to think that the whole responsibility rested upon the medical man, the profession, and yet if we analyze sufficiently, we will find that the real responsibility for what the medical man is, for what the hospital is, for what nurses are, for what scientific research and investigation is going on will, in the last analysis, be laid at the door of the public. It may not have been so in the past in any appreciable way, but the time has come, and it is coming to be very emphatic in the near future when the public will be responsible to the local government, to the state government, and to the national government, for the health of every member of the community. Why do I say this? Why do I consider there is a peculiar touch of aptness in the way this subject was put? At first, it puzzled me—the responsibility of the community to the profession.

The profession has a duty. It has a duty to many. It has a duty to every individual, to every member of its own body. It has a duty to every man, woman and child to-day in this country to give the very best service that the current medical knowledge of the world afford. I am going to repeat that thought: the medical profession of any locality, of any city, of any town, or of any state, or of the nation, owes to every member of that community, to every citizen of that state, and to every American the best in treatment and diagnosis, in care of all kinds, that the present state of medical knowledge can afford. (Applause.)

Why do I say this? I say it because the medical profession is one of the learned professions. It, by the very nature of its calling,

owes service to every human being needing it. It owes service that the knowledge which it uses in its service enables it to give. The day has long passed in medicine—I believe it is passing somewhat in the other learned professions, when it is a great question of individual service. It is now a question of professional service, and this is eminently and emphatically true of the medical profession because of the fact that it has so grown in the scope of the sciences that lie at the base of it; it has so grown in what it needs to form a correct means of treatment that no living individual is capable of giving the treatment that any one of us at any moment may need, and therefore, I consider the statement indisputable that the medical profession owes to every man who is sick or in danger of becoming sick, who has a disease, who needs treatment of any kind, the best treatment that the whole profession at any moment of the day or night can give.

Now, if this is true, then it necessarily follows that the responsibility for the giving of that kind of complete, satisfactory treatment, the responsibility to see that it be given rests upon the community, rests upon the state, the city, the nation, because the medical profession itself cannot furnish all the means necessary for that kind of service.

A very eminent and reliable economist, Irving Fisher, has said that if the proper and general treatment of sick people throughout this country were given in proportion to the present state of medical knowledge, the average age of our people would be increased by 15 years. Think of it as an economic question of importance to the nation! Think of it personally as a question of a longer, more useful, more pleasurable and satisfying life, if we could all individually share in our proportion in that average increase of age in our nation.

It is hard, of course, to prove absolutely that such a statement is true, and yet I have spoken to several medical men and have asked them whether they believed it a true statement, and all have said they believe it an understatement of what might be. Therefore, what are we dealing with in this question of health? What are we dealing with in this question of the standardization of hospitals? We are dealing with a question of increasing the age, and therefore the usefulness, the happiness of our whole nation. The responsibility then is a clear one, is an absolutely convincing one, that the public, the community, must realize that it owes to itself, to every member of it, that it owes to the medical profession, that it owes to the nurses and all those concerned in any way, directly or indirectly, with the health of the community—it owes them two things: the removal of the obstacles to the satisfactory practice on the

part of the medical profession, the healing art, and it owes them the means to enable them to practice that art with better efficiency.

Now, I am going to ask you to go over with me some of what seem to be the obstacles that the community must remove. Remember, we cannot put the burden on the medical profession. The public must be instructed. Medical men should do all they can to aid in that enlightenment of the public, but it belongs to others; it belongs to laymen; it belongs to the newspapers; it belongs to the periodical writers; it belongs to the whole public to inform itself as to what are the obstacles standing in the way of the profession practicing its healing art in the most effective way possible.

We all think we know a great deal about health, sickness, the ways of preserving health, and the ways of getting rid of disease or sickness. We all know of some household remedy. We all think we can doctor ourselves in one way or another. It is one of the most familiar experiences that the child meets with to be treated for some little ailment or trouble by mother, or grandmother, or some one of the family, and so there seems to be a kind of impression that medicine or, at least, treating ailments is a sort of common sense effort which most anybody can take hold of; that it is only great surgical operations that we feel afraid of. We think of the curing of some little ache or ill by home remedies, but there are ailments which we cannot treat successfully ourselves, and in such instances we need the services of physicians.

One of the most luminous thoughts that has come into medicine in recent years is called preventive medicine; the prevention of disease. Now, there are many phases of preventive medicine, but I am going to touch upon a general view of it in order to bring about in your minds what I think should get into the minds of the whole public.

We have specialists of all kinds in the country. We have eye, ear, nose and throat specialists; we have specialists in surgery, we have various specialists in internal medicine. We have diagnosticians, we have hygienists, and a whole unnumbered roll of men that attend to particular ailments. We have therapies of all kinds—drug therapies, and a host of drugless therapies, and yet I am still to hear of a health specialist, a man who confines himself or his practice absolutely to healthy people. Have you ever heard of a man who refused to see a sick person, but insisted that he would have consultation, would have nothing to do with any but the healthy? Now, that is what is needed. We need health specialists. We need hospitals for the well. We need real health resorts. Why? Because if there is anything underlying preventive medicine, it means that we are to keep people in health.

We need men who will let themselves be known by the public as periodical examiners of the healthy—yearly, bi-yearly, or more often if you wish. We need examiners of the healthy, in order to tell them how to keep health.

We take most of our illustrations nowadays from the keen efficiency of business men and manufacturers. What would you think of a manufacturer who left his engine, whatever the machinery may be, for inspection and care until it broke down, until it wore out? You would say he is not fit to run the business; that he ought to have had that machine looked into, cared for, and safeguarded against a breakdown by monthly or by yearly inspection.

Now, these bodies of ours are biological machines. They are machines with a vital force in them, which vital force can act only provided the material side of the machine is right, is exact, is healthy, is normal. If the nerve tissue wears out, the mind will not work right, no matter how brilliant it may be. If the nerve tissue wears out or becomes infected, in any way loses its normal power of physiological functioning, the vital force cannot compel that tissue to do the work that nature intended it to do. It may need only a rest; it may need some drug therapy; it may need some mechanical therapy, like surgery or anything else that is merely mechanical. It may mean the most careful, scientific tests to determine just what is the matter and that may be the situation with many of us, for it may be the condition of the tissue of the brain or muscle or bone, or it may be some change in the digestive apparatus before we laymen know it, before we doctors in regard to ourselves realize it. We should put ourselves regularly, periodically, into the hands of the most highly cultured, the most scientific diagnostician we can meet in our community, and if we can get a group of them to look us over, to apply all the tests to see if everything is right, we will have done the wisest thing possible. (Applause.)

We will have done something that is worth far more to us, far more to the community, far more to the nation, than if we waited until we had to have an abdominal or other kind of operation, or had to go through month after month of other treatment in order to bring back this wonderful biologic machine, our body, into a proper functioning condition. (Applause.)

- Health is nothing more than a normal functioning of all our tissues and all our organs, and our mind's activity, our energy, and all that we do is conditional by the way these various tissues and organs function. It, after all, theoretically, is a simple question. The surprise really, as I see it, is that the medical

profession has not told us this long ago. Perhaps many of them would hesitate to say in the public print or from the public platform what I am saying; they might feel that the public would not take them seriously, would not believe them. But let me say this as a non-medical man: the public is beginning to realize that its health is in the hands of the medical profession; the public is beginning to realize that the medical man is the most valuable man we have in the country to-day. Not only our nation, but the European nations are realizing that the savior of the health of Europe and of America is the medical profession. (Applause.)

The time is coming and soon when there will be the proper honor, the proper respect, the proper regard paid to the medical man. We, the public, are going to see it. The government already sees it. The government has exempted from military service medical students in their second, third and fourth years, and also interns in hospitals. Exempt them, why? Because they know that if there should become in this country a shortage of medical men, we would be helpless in the matter of our health. We won't know where to turn.

Furthermore, Europe is calling to us in its distress to help it, to take care of the shattered soldiers that are sent back into civil life and of the many who are now suffering from diseases brought on by lowered resistance in their systems due to lack of proper nourishment. Contagious diseases are spreading there, and poor Europe is languishing for the need of more medical men and why? Because they did not know, they did not realize that this war was going on so long. They thought it would stop in a year or two, and as a consequence they stopped their medical courses. They almost destroyed their medical education, and as a consequence they are not having the regular supply of doctors presented to them year after year as the war goes on. Even the central powers find their medical education almost completely disorganized. Why? Because they thought they would be in Paris by the first Xmas of the first year of the war. And now they are suffering. I have had it from the lips of one who went over there as one of the units who helped the central powers that medical education was disorganized. He said the care of the civil population is almost entirely neglected, and even the care of the soldiers is not what it ought to be, on account of the shortage of medical men; and yet the long headed, calculating German powers. Germany and Austria, had thought they looked ahead. They have been preparing for forty years, we are told. We know that they failed to realize a number of things, and they have made a terrible blunder which is going to tell against them very seriously in

the next year or two of the war. And while I have mentioned the central powers, let me tell you what this same doctor who came back on the declaration of war between America and Germany said about that nation. He said their main strength in this war, their main reason and cause for the tremendous power they have is not so much the military training, not so much the guns and munitions, not so much the subjugation of the people, and their ready acceptance of all kinds of discipline, but more than anything else it is the tremendous national strength shown in the almost perfect physique of every member, of every soldier in the army, and I am afraid, seriously afraid, that we are going to find that one of our weaknesses will not be lack of money, lack of munitions, lack of proficiency, lack of bravery, but lack of physical stamina in many of our young men who are going into the army.

You have heard the words of alarm uttered by Secretary Daniels. We know that there are weaknesses in our soldier boys which we shudder at. We have not as a nation in the past looked to the health of every individual amongst us; looked after health before birth, during birth, and in the development of physical life afterwards. We have been as wasteful of our physical strength, as we have been wasteful of so many other things. Now, we must enlighten ourselves, we must become intensely acute in the matter of our health, and this can be done only by the public, and the community, realizing the responsibility that it has—keen, serious, of national importance—to look after its health, to keep it, and as far as possible avoid the oncoming of disease. That is one of the obstacles we must take from the medical man. The medical man is ready to keep us from disease if we only go to him while we are well. But there are other obstacles.

I am glad to learn that in Kentucky you have succeeded in keeping from the newspapers, and therefore very common knowledge and enticement to the public, information in regard to unfit practitioners. Quacks and quackery we call it at times, men who are unfit to practice, and unfit by training. I am told that you are not very seriously inconvenienced by such unfit practitioners here as a commonwealth. If so, you are blessed because in most of the states that I have any knowledge of the public, the poor gullible public, is being constantly informed on nearly every page of every daily, morning and evening papers, in weekly papers, and sometimes even in periodicals, that there are men who will do so and so if you will only go to them and give them a chance; that they can cure you of anything by the simplest remedies; that they can

treat you in various ways with hands and instruments in such a way that any disease or any affliction which you may have may be remedied. And these men by the hundreds, by the thousands, throughout this nation are making money by the millions, are getting money in fabulous amounts, and therefore are injuring the health of thousands and millions of people because they cannot do otherwise. They are not scientific, they are not observing the laws of the sciences; they are not basing their therapeutics, whatever form they may take, upon the well known laws of physics, mechanics, chemistry and biology. They are simply using one little phase of natural science, and that is psychology or hypnotism or, as it is sometimes spoken of, Christian Science. (Applause.) It is neither Christian nor science. But there is a reaction by reason of the treatment, due perhaps to a certain personal magnetism; and strange as it may seem, these men influence nervous, silly people; such people may get some momentary help, and the real doctor, the scientific doctor is discontinued, is not able to cope with their difficulties or troubles, because their trouble, if it is at all a real trouble, and not a mere mental one, is so deep, so genuine, so thoroughly in their tissues that it will require careful examination, many tests, and prolonged treatment, and of course the kind of people—and there are millions of them—who go to these advertising healers want things done quickly; they don't want to wait; they want to be cured in spite of all the laws of nature, and that is just what these fake healers sometimes seemingly do.

If I were a very wealthy man, a man of many millions, I would buy up all the advertising space in all of the newspapers, in all the journals in this country that are devoted to advertising quacks and quackery, and would either leave them blank, or I would put some wholesome advice in these papers in regard to right living, honesty, common sense, and the observation of the ordinary laws of nature. (Applause.)

I once had a conversation with Dr. Pritchett, President of the Carnegie Foundation, in which I said to him, "Doctor, why don't you spend some of the Carnegie money and stop this pernicious advertising on the part of medical men so-called?" "Well," he replied. "What do you think we have got in the way of money; we only have \$137,000,000 as our fund, and you don't suppose we can accomplish much with that small sum, do you?" (Laughter.)

What does that mean? It means that this poor nation of ours is being humbugged by the millions in regard to that most precious thing we all have, our health. It is an outrage; it is an injustice; it is an absolute crime to the

nation, and I hope some day our legislators, our President, even, may realize that he could do more by proclaiming a week for health, a month for the consideration of the health problems of our nation, and put at the head of the list, down with the advertising of quacks. (Applause). If the newspapers would rise, as they are so splendidly rising to real patriotism and genuine preparedness, and refuse the use of their columns, as they have here in Kentucky, to these men who are hindering us as a nation, there would be a better and more hopeful future before us from the standpoint of the health of our nation. (Applause.)

There are many other obstacles that the public must remove from the medical profession. The medical profession, I am going to tell those who are not medical people here, is a wonderful profession. They are the most unselfish, the most high-minded, the most self-sacrificing body of men I have ever met and dealt with except perhaps the clergy—some of us at least. (Applause.) But the members of the medical profession are too modest. They have gotten amongst themselves, and of course they must be praised for it; but their high type of ethics hinders them from telling the truth sometimes—or at least all the truth. Of course, I am speaking now of the real high type of medical men who are moulding the future of the medical profession, of that great body of men that is to-day representative of the profession. They shrink from publicity; they fear that the public will look upon them as self-seekers; and I believe the public would, if any individual tried to arouse a movement towards the exposure of those in any locality who are doing this pernicious self-advertising. But there must be some way in which the public, the community, all of us will get protection against these false advertisers. If the local doctors cannot do it, then we should try to get laws passed that will hinder it. If we can prevail upon the newspapers of the country to refuse their columns to this kind of advertising, well and good, but if we cannot, then something must be done by the strong and guiding men of the profession to influence private wealth. While I am speaking of the responsibility of the community, let me say a word about private wealth.

There is a great deal of private wealth in this country. It is really in some localities doing things for the public in the way of helping institutions, founding institutions, endowing them, which make us feel that wealth really is a blessing; but there are many things more to be done with private wealth. Public funds, we ought to refer to to-night; but I want to say that private wealth must come to a realization of its responsibility in this matter of the health of the nation. What better

could it do, any man's wealth and a woman's wealth, than help to hinder the delusions of the public; help to hinder the public from being drawn into false ways and false thinking of the health of the individual and of the community. Have we not in every community men and women of wealth who will devote some of their money to the propaganda of a real science, the real science of medicine, as opposed to the false, scheming science of medicine that is made so much of?

Just before leaving Milwaukee I was told something in confidence that I am going to tell you in confidence.

A few wealthy men in Milwaukee became impressed with the thought that the medical men now in our country were the most needed men for the welfare of the nation to-day, and they have decided to raise a fund to make it financially, at least, a less burden, or no burden at all, to the man that is needed in the army to go and give his service, without feeling that his wife or mother or father or any dependent is going to suffer in consequence while he is serving his country. (Applause.) That is what I call response to a responsibility of the public, the realization of a responsibility met in a generous way.

Some means must be put at the disposal of the medical profession if it is to do what it can do in the use of the current knowledge of medical science for the health of the people. The medical profession must have ample hospital space. It must have beds equal to the demand in number; it must have beds equal to a possible straining demand in the near future for the wounded that will be sent back into each community. It must have beds all through the county, all through the city, there the service can be best rendered to those who need bed treatment. Your hospitals must be looked upon as the centers of health, the centers of relief from sickness and disease, the centers where knowledge will be diffused in regard to preservation of health. It must be the center of education of the people throughout any community in the matter of preserving health, and only after that will it become a source and center of healing the sick. If there is no right education, if there is not all that which makes proper education in regard to the preservation of health in our hospital centers; I do not care what kind they are, public or private, I do not care whether they are mere hospitals or sanatoria, or whatever they may be; they must become the centers in which the sick person will receive that education which will help him or her to stay well afterwards. There should be education of the nurse, education of the doctor, education of the intern, education of the orderly, education of every person connected with the service. (Applause.)

Hospitals are not merely houses or places for the sick in which they are to receive certain kinds and measures of therapeutics. No. They are the places in which medical science is to grow; they are the places in which discoveries are to be made. They are the places from which, in close contact with schools and laboratories, our present day medical knowledge has come. The public must realize this, and therefore, it is not only a question of how many beds you have in a community, but how well the occupants of those beds are treated, how much of the 100 per cent. present day medical knowledge and skill is centered upon the cure of the sick person and will help him to remain well after he is cured. How effective and complete is the laboratory service? How skillful and efficient is the nursing service? How much and how good is social service connected with the sick in this hospital or that hospital? (Applause.)

Medicine to-day, we all know, is a social question, or, better, a sociological question. There is no loss in the country, economic, industrial, social, inefficiency of one kind or another, that is not traceable to ill health, to the health of one kind or another. It may be mental; it may be neurological; it may be of the various other tissues of the system, but our waste, our lack of accomplishment, our loss, all that comes under the designation of inefficiency is traceable in one way or another to home conditions, economic conditions, and industrial conditions, etc., and no medical man, no hospital, no nurse, can treat a sick person properly and completely up to the requirements of present day knowledge unless there is a social service at work on that case. (Applause.) I am going to go farther and say that social service is not only needed in our institutions, in our hospitals, sanatoria, but it is going to be an indispensable element in every group of office practice. And that brings me to another thought in connection with hospitals. A patient in hospitals, public and private, is gradually becoming a patient of the institution or of the staff rather than of the doctor. We are rapidly coming into socialized medicine and cooperative treatment. The day of the single, independent, separate doctor treating a case of any consequence is fast going into history. Group diagnosis and group treatment is what medical science to-day demands of the medical profession. If I may be allowed to put down a dictatorial statement before a body of medical men, I will say that we, the public, have a responsibility of demanding that the medical profession act as a profession wherever there is indication that such action is needed in order to get the present day efficiency and medical knowledge focussed on the case. (Applause.)

I do not believe I am very much of a health crank, but from what I know about the medical profession, and from what little I know about medical science, and from what I see is the trend of medical practices, I would not go to a single, separate, independent practitioner for the treatment of a headache. If I got a headache that persisted any length of time I was not sure was the result of a mere passing cause, I should insist on a careful diagnosis; I should insist on all laboratory tests being applied. I should demand that not only the internist, but specialists in the eye, the ear, the nose and throat, and perhaps a neurologist, be called in to determine my real condition. I would want them to get together and pronounce that I was sound so far as they could see, and that there was nothing they could think of that could be done in order to assure me as to what was the cause of my headache, because we know that until you can fasten upon the cause of an ache, you are not in a position to treat that ache. We all know that. (Applause.) Therefore, what is evident is the unmistakable and mighty movement of the medical profession to-day, cooperation—group diagnosis, no one man knowing enough to diagnose and to treat even what is seemingly a small, insignificant symptom or ailment, and that brings me back to the thought of preventive medicine. If this can only be brought to the minds of the public, if they can only be made to realize that many a death from cancer, and many a sad and lingering death from tuberculosis, and many a breakdown of a strong man originates in the beginning of cardiac trouble and renal trouble, much good will have been accomplished. Group diagnosis is the coming thing at the first indication of anything wrong with the system. (Applause.) We, poor, ignorant public, must learn that if we are completely normal in all our functioning, there will be no aches; that an ache, a pain, is something that is out of the ordinary, and it is nature's alarm clock telling us to beware, telling us to go where we can find a real, careful, thorough, broad diagnostician who can tell us what is the matter with us. The public must provide the means, must spend its money with a generosity which is yet among us unknown. We are spending millions and millions of dollars in this nation of ours on agricultural and horticultural pursuits, and we have special departments in our national and state governments for the investigation of animal life, for the breeding of cattle and of pigs; we have, I believe, in the national cabinet one whose function it is to look to our agriculture and to our horticulture, but we are yet waiting for a member in that cabinet who will look to the health of us poor, or-

dinary, every day American citizens. (Applause.)

I remember speaking from the same platform that your revered J. N. McCormack spoke from some nine years ago, in which he advocated that there be in the national cabinet a representative of the medical profession to see to the health of the nation. (Applause.) He was a pioneer in this movement. It has not yet come, but it is coming. It must come, and perhaps that will be one of the blessings that we will owe to this war. (Applause.)

Just one word more. We, the public, doctors and citizens, must bring pressure to bear in every community in which we live, in conversation and in every way we can, to arouse the public to a realization that medicine to-day is not a hit or miss matter of treatment: that it is a most carefully wrought, laboriously worked out and skillfully systematized art for the prevention, for the alleviation and the cure of disease in man.

Now, I am going to say a word in an earnest plea with you and the public to treat medicine as an art, a useful art, at times perhaps a beautiful art, certainly an art that brings the greatest blessings at times and the greatest pleasure to our hearts, but an art, and therefore is characterized by one of the striking features that belong to the beautiful arts. It is a matter of careful delicate precision—call it technic if you will; call it keen, penetrating, scientific insight if you will, but it is the bringing together of bits of knowledge from physics, from mechanics, and from chemistry and biology, from pathology and bacteriology; I do not care what it comes from, but it is the delicate application of all that goes towards the making of a right and trueful and musical human life. What is there that so jars and breaks the harmony of the life of all of us as ill health. Is ill health coming on us and is it apparently such that we cannot shake it off? Along comes a real doctor, a scientific doctor, a diagnostician, an able surgeon, a skillful specialist, a drugless therapist, if you will, a nurse, a hospital with all its surroundings, and by a delicate and deft combination and application of them all to the human system there is a recovery, a gaining back of strength, color in the eye, vigor in the muscle, impulse to the mind, ambition in the will, and we have a new man where we had a poor dejected wreck of human life. There is nothing so beautiful, there is nothing so noble, there is nothing which we should prize so highly next to the welfare of our souls as the recovery of health, the preservation of health, and that we the public, the community, owe to medical science and to the medical profession! God bless the medical profession! (Loud and prolonged applause.)

CAPTAIN SHERRILL: I wish, on behalf of the Association and of those present, to thank Father Moulinier for his very beautiful and eloquent address. I believe that I can truthfully say that he has proven my first statement, that he knows more about this subject, or as much, as any man in the country. (Applause.)

The next speaker on the program will be Dr. Lewis S. McMurtry, President of the Medical Faculty of the University of Louisville, who will talk to us about the relation of the hospital to the physician and the physician to the hospital.

DOCTOR McMURTRY said:

Mr. Chairman, Ladies and Gentlemen: It has been my privilege to attend a great many public assemblies of the medical profession and to listen to a great many distinguished lay speakers, United States senators, governors, distinguished lawyers, mayors of cities and other distinguished members of the laity, but I feel I can say this evening that I have never heard any layman address an assembly of doctors that so thoroughly interprets the heart and spirit of the medical profession as Father Moulinier has done this evening. (Applause.)

It was the custom of the medical profession for many centuries, and it was handed down to a comparatively recent period, to throw a veil of mystery about itself. Its remedies in the olden times were secret, and, consequently, even in a day not very remote, it was customary for our profession to hold itself aloof from the public, and they established, as it were, a barrier between the medical profession and the public, and it is only in recent times that the profession has been going out to the public and carrying its messages to the people, and just in proportion as that has been done has that disgraceful quackery which was so fully and lucidly described by Father Moulinier disappeared. As the people got to know the medical profession better and to know its methods better and familiarized itself with the fact that medicine and science and common sense are all correlated, just in that proportion has quackery gone away.

I feel like pausing for a moment here to say to Father Moulinier that we feel pride in Kentucky in the fact that so far as quack advertisements are concerned, we have the cleanest press in the United States. (Applause.) Much of that and the absence of public quackery in this state have been largely due to the work of this Association and to our State Board of Health, which is the creation of this body, and the spirit of cooperation which it has secured from our newspapers. (Applause.)

During the past decade the medical profes-

sion in this country has undertaken several great reforms. One of the most important of these has related to medical education. A comparatively short time ago, within the memory of every one here in this room, we had more than twice the number of medical students in this country that we have to-day. We had medical schools whose diplomas were accepted as a license to practice medicine; we had medical schools independent of universities and independent of the state. All that has been revolutionized, and within a very short time revolutionized by forces that were generated and acted upon within the medical profession itself. We have now no independent medical schools. All the medical schools in the country are under a standard which has been established, which is well known, and which cannot possibly ever be changed to the disadvantage of the cause of medical education. This is a wonderful achievement of the medical profession; it is wonderful in that it involves great personal sacrifices for a great many members of the medical profession, and we all know what has been the effect upon the body of the profession as a result of this great reform that has been brought about in medical education.

For instance, in 1908 we had five medical schools in Louisville, and we had between 1000 and 1500 medical students. We have now one medical school in the entire State of Kentucky, and a little over 200 students. This marks a change so vital to the profession, so vital to the attainments of the profession that the standard of the profession in relation to the public has been materially elevated.

The medical profession started out on another very important reform which I think perhaps we do not think of enough, and which perhaps has been lost sight very largely, namely, it has not been many years since the great body of the profession used remedies of a nature the composition of which they were ignorant and accepted them upon the mere statement of a manufacturing chemist. Formerly proprietary medicines were used much more extensively than they are to-day. A doctor visited his patient, made a diagnosis of disease, and prescribed for the patient a remedy the composition of which he did not know. It looks in this day when the enlightened knowledge of science is thrown over medicine, that such a thing would scarcely have obtained in so recent a time. It seems impossible that the profession would have countenanced such a thing, yet it was done. The traveling missionary or the proprietary medicine man visited doctors' offices, left samples and literature on their tables, and it was like getting something ready made, it was so easy. The doctor took samples with him when he went to society meetings and prescribed medicines

the composition of which he did not know. All of that through the work of the Council on Pharmacy and Chemistry of the American Medical Association has been eliminated from the medical profession. That is the second great reform that has occurred during recent times in the profession.

Now, we come to the third reform that is now being inaugurated or taken up, and that relates to our hospitals. I feel that Father Moulinier has done a great service to-night by presenting the relation of the hospital to the public. It could not be done by the medical profession, and I sincerely hope that his eloquent voice will be heard all over this country by the laity in presenting that subject. He has presented the subject to us to-night with remarkable lucidity of thought. As I have said, the medical profession cannot do it. Whenever a medical man goes before the public, the public looks upon him as making a plea for the benefit of the profession rather than for the people. I do not know that we can blame the public as yet, for sufficient time has not elapsed for the public to thoroughly understand the medical profession. Sometimes I think it is wonderful they understand the medical profession as well as they do; but if we would send over the country men and present these subjects to the laity intelligently and clearly, we would find that prejudice would rapidly pass away. For instance, suppose you were to go before the public in this city or in this state to-day to get money for a medical school, you would be laughed at. I wish to take this occasion to say that it costs to give a medical student instruction for one year that is required by the medical colleges in Class A four times the amount that a medical student pays for his tuition; it requires four times that amount of money to give him what he has to have. Who is going to give it to him? That is a question that is going to come to the public very rapidly,—who is going to give it to him? In Minnesota the states gives him his medical education. Let us suppose that we have no medical school in Kentucky and a young man growing up in this state aspires to enter the medical profession, he goes to Cincinnati, to Indianapolis, or to St. Louis to get his medical education. In this way we would be sending young Kentuckians all out of the state to receive charity. He goes to an institution that will give him his medical education, and that is a question that is going to confront the medical profession all over the country and very quickly.

Suppose you go before the public about hospitals, which is akin from their standpoint to medical schools, they have an idea that hospitals are for the benefit of doctors. In our municipal hospital, for example, where the

very best talent of the medical profession of the city is given and they give their services to the indigent poor without money and without price, they are frequently looked upon as self-seeking in the discharge of their duties. The public has an idea that all these things are gotten up for the doctors themselves; that somehow or other the doctor is the recipient of the benefit when he is giving his time and his skill to these people without money and without price. When a doctor is working in the cause of medical education and charity and preventive medicine, working and spreading knowledge in doing original research for the benefit of science and for the people, the people look upon it as something to benefit the doctors. That prejudice has got to be swept away, and I know of no better method of sweeping it away than by such an address as we have heard this evening from Father Moulinier. (Applause.)

What should be done about the hospitals? The subject has so many phases that I can only in the brief time allotted me speak of one, and that is, the importance of hospitals being standardized. Every hospital should have certain things that are essential, and so few of them have these essentials. I do not want you to have in your minds and to visualize such a hospital as the great hospitals of the country that are abundantly endowed, and are the centers of research and of medical education. I do not want you to visualize such a hospital as our magnificent new city hospital here, with its well equipped laboratories and departments, but I want you to think about the hospitals that are going to be built by the thousands within the immediate future all over this country, when every town of 10,000 inhabitants will have a hospital. These towns must have hospitals if the people are to be properly cared for and treated. There ought to be a standard established requiring all of them to live up to. Every hospital, small or large, should have these essentials of scientific equipment and means to do the work in order to bring to the patient that degree of precision in medical treatment that has been described by Father Moulinier this evening. This is a reform that all of us must enlist in and devote our best energies and efforts towards bringing it about. (Applause.)

CAPTAIN SHERRILL: I would like Mr. S. Y. Ford, President of the University of Louisville, to speak on the relation of the University to the Hospital and of the Hospital to the University.

MR. FORD said:

Mr. Chairman, Ladies and Gentlemen: There is very little that I can add except to emphasize some of the excellent things that have been said. It is impossible in a short time to cover so large a field as that which you

have under discussion to-night, and in view of my connection with the University I will simply emphasize the matter of medical education.

The public is coming, but coming too slowly, to realize that public health is a public charge and a public responsibility; that doctors are in a sense servants of the public in the discharge of that responsibility. I have sometimes thought I would like to see carefully kept statistics by a body of doctors of the time and attention they give to patients who do not requite them, and poor patients whom they treat in their homes, who appeal to the generosity of the doctors, or patients in public hospitals where the doctors go and offer their services freely and without pay. I should like as a matter of curiosity to see the percentage of people that doctors as a body treat without pay and to whom they offer their services gratuitously. I believe the public has not the remotest conception of the magnitude of the free and unrequited generosity of physicians. If the public clearly understood this, there would be no question as to their response in furnishing funds toward medical education.

I believe we are coming to a time when we are going to feel a scarcity of doctors in this country. I have felt that during several years in my connection with the University of Louisville in studying its problems, that justifiable progress has been made in raising the standards of medical education. I believe it is a necessary thing, but I sometimes fancy it has gone on too rapidly and a little too far. Our medical schools have reduced the number of students as Dr. McMurtry has told you, and the time may come when there will not be as many doctors as will be needed for the country. Perhaps I ought not to state my opinion in the presence of this body, but I believe that to be true, and if that is measurably true, how much more is that going to be felt in the critical times that are now facing this country, when every hospital is taxed already to care for the ordinary sick and wounded of our population. All hospitals are going to be overtaxed when they begin to receive the wounded who have resolved to fight our battles and come back to be restored to health. Then we will feel more than ever the shortage of nurses, the shortage of doctors. We are feeling it now in our hospitals. We are feeling the lack of interns on the staff; we are feeling it in every direction. There are not doctors enough. As might have been expected, physicians have nobly and promptly answered the call to duty from all over the country. As time goes on we will feel more and more the shortage of doctors. If good can be said to come from such great disasters, it is to be hoped that the public will come

more and more to a realization of their duty towards hospitals and doctors.

I stated a moment ago that public health is a public charge, and that doctors are public servants and must be trained for that service. If they are not in a position to bear the expense of that training themselves, and they cannot serve the public as they should without it, then it justifies the expenditure of public money to care for the public health through boards of health, through antituberculosis associations, through food and drug analyses, and through the construction and operation of hospitals. The great good that comes to the public through the medical profession justifies the expenditure of public money in training competent scientists, who shall have charge of these boards and shall man and direct these hospitals. Of what use are hospitals if they are improperly equipped and have not properly trained men to man them? How are we going to get the men unless we are able to expend and properly equip our institutions of medical learning?

We are coming to recognize very rapidly that every hospital, as has been well said by the principal speaker, is more than a place to treat the sick. We recognize more and more that the hospital is a center of medical education. We are coming to recognize that in this great battle that the public is waging for the preservation of public health, which means the conservation of public health and public efficiency, the hospital is the great central and strategic point, and all facilities for clinical research must be put at the command of the man who wants to enter the medical profession. (Applause.)

We have recognized that principle in the construction of our city hospital. We have made it a teaching hospital, and there has been established such relationship in that hospital and the University of Louisville that we have put at the disposal of a staff of doctors and citizens all the possible modern facilities for study; but so far as our city is concerned, that is where its participation in medical education stops.

Dr. McMurtry has said that we would be laughed at now if we were to suggest the expenditure of public money to pay for the expense of medical education; yet I submit the proposition I made a moment ago is justifiable—in fact, it logically follows that if you want to do the thing right and efficiently, you should go forward still further and expend whatever sums of money are necessary for public hospitals to contribute toward medical education and to the upbuilding of medical schools. Notwithstanding that public health is a public charge, the public agencies must protect the public health; they must not wait until public health is impaired to build

it up in hospitals, but to take such steps to conserve the public health and to teach people how to protect themselves; hence all these organizations for public sanitation and protection of health are right and proper, and growing out of them the individual members of communities are protecting and safeguarding their health more than ever before. It is but another logical step that the public should recognize its duty and contribute its part to the heavy cost of training medical men. They are coming to that very rapidly in some parts of the country. I should like to see the day when we can come to it not only in Louisville, but throughout the state. I am not at all pessimistic on that point. (Applause.)

Ten years ago any one would have laughed at you if you said the City of Louisville was going to contribute thousands of dollars to support the university, yet it is being done and it is growing in favor year by year. Its next and natural step will be to make a contribution to medical education, fully realizing that it is for the public good. It is a logical step following the other expenditures that are made for the protection of the public health.

When you talk to anybody about paying the expenses of that kind out of the public funds, some one will say, why spend the public money to help a man master his profession when he is going to make his living out of it? The answer would be to that in those statistics I have referred to. You can say you are not helping to make a man make his living, but you are expending money wisely for those whose services are valuable to the community in fighting and preventing disease, and men, in order to be efficient in such a fight, must have trained powers of intellect. They must have the most up-to-date knowledge of their profession; they must have adequate facilities; they must have trained minds; they must have the accumulated information of the profession and experience in order that the public may be the great beneficiary—a far greater beneficiary than the doctor himself. (Applause.)

CAPTAIN SHERRILL: The next speaker who is to address you is one of the most prominent members of the Louisville Bar. It is with great pleasure I introduce to you Judge Matt O'Doherty. (Applause.)

JUDGE O'DOHERTY said:

Mr. Chairman, Ladies and Gentlemen: This is quite an unexpected distinction that has been heaped upon me.

I have listened with great interest and pleasure and profit to the very able addresses which have been delivered to you this evening, and I think it would be unbecoming in me, almost unpardonable, were I by any disconnected or disjointed talk disturb the splendid

impression that these addresses must have made upon your minds. I have heard a good many addresses of one kind or another, but not one that is more enlightening and illuminating and inspiring than that delivered by the reverend gentleman who just addressed you. His address was one of the finest I have ever listened to. (Applause.)

Some of his remarks reminded me of a letter I remember reading years ago, one of Goldsmith's in "His Citizen of the World." Many of you have doubtless read these letters. The character he assumed is that of a Chinaman in England writing home to his friend in China, and in one of these letters he touches off very beautifully and very forcibly the quack as he was then known in England. This is more than a hundred years ago, and so in discussing quackery, as has been done this evening, the reverend gentleman and the other speakers have been assailing an ancient if not an honorable institution. (Laughter.) This letter further states that "these English are the most stupid and pig-headed people on the face of the earth." (Laughter.) They persist in dying as they do in China, notwithstanding that the quack John Brown or John Smith states in plainest print that for a shilling or for two shillings he will restore people to health and long life; that this John Smith or John Brown is known to all the world; that he is a man who has a wonderful reputation for relieving and curing people of their ailments. So you see, ladies and gentlemen, the quack was known in that day.

In the practice of law we are frequently brought, not in collision with the doctors, but in pleasant association with them. Sometimes we have our jokes at their expense. I remember seeing a doctor on one occasion very considerably nonplussed by a lawyer asking a question something like this: "Doctor, how long did Mr. Jones live after you began attending him?" (Laughter.) The doctor had to admit that it was only a month. "Well," said the lawyer, "he must have had a grand constitution." (Laughter.)

The truth has been brought to our attention to-night very clearly and forcibly, that we are all deeply indebted to the medical profession. It is one of the noblest professions that can attract or occupy the attention of the mind of man. It has been said, and with great truth, that truth itself is the natural object of the human understanding, and the medical profession is in the pursuit of truth to find the cause of conditions with which it has to deal and to correct those conditions by correcting the causes from which they spring. Of course, the quack gives no attention to causes; he deals only with conditions. He makes practical application of the political declaration of one of our great statesmen,

that it is a condition, and not a theory, he has to deal with. He finds a sufferer from a disease which he knows would take perhaps months or even years of patient treatment to pull that individual through successfully, but the poor patient has nothing to hope from that man. Such a man has got to promise the patient practically immediate relief, and so he lives by deception, when the real doctor will hesitate before promising very certain relief, and he will encourage his patient and impress upon him the necessity of observing certain laws and conforming to certain requirements, and in that way leading him back to the paths of health. Of course, the quack will do nothing of that sort.

There is no profession whose calling is higher or holier, perhaps outside of the clergy, than that of the medical profession. I have always believed that, and I agree with all that has been said on that point. I have always believed that the medical man who deals with his patients merely as he would with an animal, who does forget for an instant that patient is a composite of body and soul, a wonderful union of personality and knowledge is worse than any other individual. These two forces act and react upon each other. The doctor who does not understand that or who forgets it for a single instant, has not learned the alphabet of his profession. (Applause.)

There is only one disease unfortunately we have not mastered. After we have exhausted all of our resources, have gone into the very heavens of the sciences and down into the bowels of the earth to discuss remedies of one kind or another, there still remains the unalterable law that it is appointed for all men once to die, and after death judgment. That is the serious side of the question. Doctors can only help us on this side and make our stay here lingering sweetness and hold us here just as long as we can stay.

I was very much interested in a little celebration out at the School of Reform some years ago, of which I was a director at the time, and one of the entertainers sang a song that impressed me very much. It went something like this:

"Oh, I don't want to be no angel, till I can't help but being one." (Laughter.) I thank you.

CAPTAIN SHERRILL: There is one more speaker who will address you, Mr. Edward H. Griffith from the War Department on training camp activities.

MR. GRIFFITH said:

Mr. Chairman, Ladies and Gentlemen: There is one test which is applied to every project that is presented to the War Department commission on training camp activities, and that is the question, will it help win the

war? If it won't help to win the war, we are not interested in it.

The War Department Commission on Training Camp Activities is actually interested in but two things, namely, first, the prevention and reduction of venereal disease in the army and in the civil community; second, the maintenance of moral standards. I presume this organization is most interested in the first of these purposes.

The first thing to do in attacking that problem is to suppress prostitution and control the sale of alcohol. It is absolutely essential that soldiers be freed from sexual temptations and from the promiscuous sale of alcohol which has innumerable untoward effects.

I think there are three or four things this Association can do to help the government program. This community and this state are indeed very fortunate in being free from quacks, but there are quack methods at work nevertheless. I am reliably informed that there is now a very considerable sale of quack nostrums for the treatment of venereal diseases. It would be a splendid thing for the medical profession of this community to take up that problem and put a stop to it.

Another way the medical men of the city and state can cooperate with the government is in working for a law to compel the reporting of venereal diseases. I expect to find most of you antagonistic to that, and quite logically so, because, as I understand it, efforts have been made along that line for adequate protection to the physician from damage suits which would inevitably result from a violation of professional confidence. To-day it is possible for the physician to furnish the United States Public Health Service epidemiological data that would be invaluable. It is possible for the physician to report his cases by number in such a way as to preserve confidential relations between physician and patient, and it is entirely possible because it has been done in a great many places. California, for instance, has a state law compelling the reporting of venereal diseases. That law is being enforced to the letter. The City of San Francisco recently went on record as favoring everything to enforce the spirit and letter of that law. I think it would be better to make it a federal law, but the federal government does not want to step in if the state will take the initiative in caring for its own problems. Something must be done by the medical profession to help the government fight this problem. We cannot be confronted with the situation that confronts the armies of Europe. A large percentage of men are crippled by venereal disease. I think, too, the Association can perhaps aid the government in the matter of securing publicity along the lines of sex hygiene and educational work

in the community. We will be glad to have any assistance from the doctors in any way I thank you. (Applause.)

ARTHUR T. McCORMACK, Bowling Green: I move that this Association address itself to and endorse every legitimate activity necessary to secure for the hospitals of Kentucky such improvement and standardization as will enable the medical profession acting in and through them to so prevent, ameliorate, or cure disease, as will enable all of our people to live healthy, efficient and happy lives. (Applause.)

Motion seconded and unanimously carried.

J. N. McCORMACK, Bowling Green: I move that a vote of thanks be extended to Father Moulinier for his magnificent, eloquent and inspiring address.

Seconded and carried unanimously by rising vote.

On motion, the Association then adjourned until 9 A. M., Wednesday, November 7.

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NEWS ITEMS AND COMMENTS

The Boone County Medical Society met at the court house at Burlington, October 19th, and elected the following officers for the coming year: G. C. Rankin, Walton, President; Dr. Hays, Bullittsville, Vice President; Dr. Carlisle, Rabbit Hash, Secretary. Dr. O. E. Senour of Union, was elected as delegate to the State meeting to be held at Louisville. Those present from Walton were Drs. G. C. Rankin, A. N. Jones and G. F. Daugherty. The next regular meeting of the society will be held at Walton on the third Wednesday in November.

Dr. W. Harmon Nash, who recently received his commission in the Medical Corps of the United States Army, has reported for duty at Fort Oglethorpe, Ga.

On behalf of the Madison County Health and Welfare League, Mr. C. C. Thomas, of the Chamber of Commerce, appeared before the Madison Fiscal Court for the fourth time on Tuesday morning and asked that body for an appropriation of \$600 to carry on the work of the League in this county. The State has agreed to contribute \$2,200, provided the people in the county would raise a like sum. Mr. Thomas presented the proposition in a clean cut and concise business manner, and made an impassioned plea for the appropriation from the Court. At the conclusion of his plea, the Court voted unanimously to allow the amount prayed for, thus bringing to an end a much mooted question.

Dr. C. H. Duvall, who recently passed the examination required for entrance into the Medical Division of the army, has received his commission, that of First Lieutenant in the Medical Corps. The commission dates from October 3, though as yet Dr. Duvall has not been assigned to any particular point for duty.

commission as a First Lieutenant in the Army Medical Reserve Corps and has been notified to be in readiness to report within forty-eight hours. He, of course, does not know where he will be assigned.

Dr. Mitchell has been practicing medicine at Raywick for the past six years and during this time has made a large number of friends in the Raywick section and elsewhere over the county. He came to this county from Paducah.

Dr. O. B. Demaree, of Frankfort, who was commissioned a Lieutenant in the United States Medical Corps, some time ago, has been assigned to active duty at Ft. Thomas.

Three Ohio county physicians have been notified to report for active duty in the Officers' Medical Reserve Corps. Drs. A. B. Riley and B. F. DeWitt go to Fort Benjamin Harrison, while Dr. E. W. Fort will go to Fort Oglethorpe, Ga.

Dr. E. B. Brandon, who has been transferred to the medical corps of the regular army, and has been stationed at Syracuse, N. Y., for the past several weeks, visited his family in Elizabethtown recently. Dr. Brandon's promotion has been rapid since joining the U. S. medical forces, having now attained the rank of captain. He expects to be sent to France within a short time.

Dr. J. R. Shacklette, one of Jeffersontown's physicians and a prominent citizen of this community, left October 4th, for Fort Oglethorpe, Camp Greenleaf, Georgia, where he will be in the service of the U. S. Army. He received a commission as First Lieutenant in the Medical Reserve Corps.

Drs. Combs and Wilson, of Pineville, are opening a private hospital in the Combs building, opposite the post office. Miss Konold, a registered nurse, of Louisville, has arrived to be in charge of it.

Dr. T. T. Gibson, who was the first physician in Bell county to volunteer his services to the United States, has received his commission, and departed October 2nd, for Hattiesburg, Miss., where he has been assigned for duty at Camp Shelby. He was accompanied by his wife and two children. The doctor was one of the most prominent physicians and surgeons of Middlesboro, and his wife was popular in social circles.

Dr. Garnett Belote, of Mayfield, has left for Ft. Benjamin Harrison, and has been commissioned as first lieutenant.

Dr. A. O. Mitchell, of Raywick, has received a

Dr. T. M. Garner, of Valley Oak, has located

at Somerset for the practice of his profession, and has taken the offices of Dr. Bolin.

Dr. Y. Y. Miller, the well known Pryorsburg physician, has received his commission for entry into the medical department of the army, and has notified the department that he is ready to go at any time.

Dr. B. C. Wilson has gone to Rochester, Minn., where he will take a post-graduate course at the Mayo hospital. He expects to visit the medical schools in Baltimore and New York before returning home.

Miss Linda Neville, of Lexington, whose personal work in the eradication of trachoma has made her well known throughout the state, has a plan on foot for following up the exemptions from the National Army for physical disabilities by investigation into the history of the cases. Her idea is to get the names and addresses of all the men rejected, and ascertain whether their troubles are of tubercular origin and whether they are affected with trachoma. She called on Governor Stanley to enlist his aid in securing the list. The Governor will give her all the assistance in his power. Miss Neville decided not to wait until the lists are filed with Adjutant General Ellis, but will endeavor to secure them from the district boards.

Dr. S. E. Spratt, who suffered a bad fracture of the ankle, has returned from Lexington where he underwent an operation of an adjustment of a shattered bone which was disclosed under X-ray examination. Dr. Spratt is recovering as rapidly as could be expected but it will be several days before he is able to resume his large practice.

Dr. F. M. Travis, who has been physician at the Eddyville penitentiary for the past five years, has resigned and will locate in Benton for the practice of medicine. His brother, Dr. D. J. Travis, of Eddyville, has been appointed prison physician.

Dr. Hazel Mosby, of Bardwell, is on the broad seas en route to France. Dr. Mosby does not anticipate running amuck a German U-boat but in the event he does he will be well looked after as there are several hundred other members of the medical staff aboard as well as a hundred Red Cross nurses.

The Franklin County Medical Association met in social session September 12th, with Drs. Coblin and Montfort as hosts. There was a very large attendance of local doctors for whom a splendid buffet lunch was served, with Mesdames Coblin and Montfort as caterers, for which the

ladies were tendered a hearty and unanimous rising vote of thanks.

In the absence of the president and vice president, Dr. Flora W. Mastin presided and the regular routine business was disposed of. The Round Table discussion was, "The Importance of an Early Diagnosis of Nephritis," and was participated in by all of the physicians present in a most entertaining and profitable manner.

It being announced that the Midland Medical Society will meet with the Franklin County Medical Society on the 11th of October the president was requested to appoint a committee on entertainment. He named Drs. Patterson, Garrett and Montfort.

The secretary was directed to have printed a display card upon which shall be shown the scale of charges for professional services in the city of Frankfort.

The society then adjourned to meet October 9 at 7:30 p. m., with Dr. J. W. Wilson as host of the social session.

At about the time that the Medical Review of Reviews was founded, Professor Dillon Brown, of New York, established a semi-monthly journal devoted to the diseases of children, called Pediatrics. The opening article was by A. Jacobi, and the leading physicians of the city, among them J. Lewis Smith, Reginald H. Sayre and William H. Park contributed to its pages. Latterly it has been edited by William Edward Fitch, but Dr. Fitch has recently been appointed a Major in the United States Army, and we have acquired his blue pencil and subscription list.

Pediatrics will no longer appear as a separate publication, but has been incorporated with the Medical Review of Reviews. Beginning with January, however, the Medical Review of Reviews will contain a special department devoted to Pediatrics. This feature is but one of the improvements scheduled for the coming year. Important Symposia are now in progress, the Editor will contribute a second series of Pathfinders in Medicine, a Staff of Associate Editors is being formed, and thus the Medical Review of Reviews, in entering upon its twenty-fourth annual volume, promises to be more serviceable to the profession than ever before.

Word received from the Surgeon General of the U. S. Army, conveys the information to officers of the Medical Reserve Corps of the United States Army, inactive list, that assignment to active duty may be delayed, and that they are advised to continue their civilian activities, pending receipt of orders. They will be given at least 15 days notice when services are required.

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COUNTY SOCIETY REPORTS

Ballard—The Ballard County Medical Society met at Lovelaceville October 2nd, in all day open session.

The Vice President called the house to order at 11:30 A. M.

Invocation by Rev. Stubblefield.

Welcome address by Prof. J. S. Ragsdale. Subject: "How Are the Doctors."

Bracket dinner.

J. T. Reddick gave a talk on "Some Health Problems."

H. G. Reynolds read a paper on "Some Eye Diseases."

Mrs. H. G. Reynolds, Paducah, entertained the society with a splendid talk on Red Cross Work, its object, and purpose, and organized a Red Cross Society at Lovelaceville.

After a splendid day the society closed to meet at next regular meeting.

BOB C. OVERBY, Secretary.

Barren—The Barren County Medical Society met in regular session in Glasgow, September 19, 1917. Members present, Palmore, Acton, White, Smock, York, Biggers, Miller, Taylor, Siddens, and C. C. Turner.

The reading of minutes of the last meeting was deferred.

C. C. Turner, J. G. Siddons, E. L. Palmore reported interesting clinical cases. Nearly every member present participated in the discussion of these cases. The case of pellagra attracted much attention, and was discussed at considerable length.

The following members have offered their professional services to the Government, passed successful examinations and now await calls to service in the medical reserve corps:

S. J. Smock, C. C. Turner, C. C. Howard, R. H. Porter, T. F. Miller, Glasgow; E. L. Palmore, Hiseville; J. G. Siddens, Lucas; C. G. Depp, Hiseville.

Society adjourned to meet October 18th, 1917.

J. M. TAYLOR, Secretary.

Boone—The Boone County Medical Society met at the Court House in Burlington, Kentucky, October 17, 1917, at 2 o'clock P. M., and elected officers for the current year as follows:

President, C. G. Rankins, of Walton; Vice President, H. H. Hays, of Bullittsville; Secretary-Treasurer, Dr. I. E. Carlyle, of Gran.

Drs. Duncan, Daugherty and Hays were appointed a committee to revise our fee bill.

Drs. Rankins, Jones, and Daugherty were appointed a committee to draft resolutions on the death of our fellow member, Dr. C. C. Metcalf, of Walton.

E. O. Senour, of Union, was elected delegate to the State medical meeting.

IVAN E. CARLYLE, Secretary.

Carlisle—The Carlisle County Medical Society met at Cunningham, Tuesday, September 4, 1917, at 10 A. M.

Prafer by Dr. R. T. Hocker.

The secretary being absent, H. P. Mosby was elected secretary pro tem.

Committee on Arrangement, Dr. Robertson; place and dinner, Dr. Robertson's residence.

J. F. Dunn read a paper on "Bronchial Asthma," which was very fine and to the point. It will be sent to the Journal for publication.

R. T. Hocker thinks Dover's powder, morphine and atropine for the relief of paroxysm; iodide of potassium, iron and strychnine. Other doctors present freely discussed the paper.

Lloyd Simpson gave us a very fine paper on Hay Fever.

W. L. Mosby failed to have a paper on Information of the Heart and Membranes, Etiology, Symptomatology and Diagnosis, but gave us a fine talk on the subject, which brought out a free discussion from all present.

W. L. Mosby brought before the society several legal proceedings incident to the war. Communication from the War Department as follows: 1st. appointment of a committee, consisting of the county society and two dentists to treat, free, the rejected candidates from physical disabilities, who can be made fit for service under the selective draft. He made a motion to include Drs. Flemister and Gardner as dentists. Motion seconded and carried.

President Hocker appointed as a Committee on Neurology, Drs. Payne and Pease.

Place of next meeting, Bardwell, committee on arrangements, Bardwell physicians.

W. L. Mosby made motion to tender thanks to Dr. and Mrs. Robertson for nicely arranged dinner, etc.

A collection of \$5.40 was collected for special dinner, prepared by Mrs. Robertson.

W. Z. JACKSON, Secretary.

Daviess—The Daviess County Medical Society passed the following resolutions on the death of M. A. McDonald:

Whereas, God Almighty, the Great Architect of the Universe and the giver of all good gifts, in His wisdom, saw fit to remove from our midst, Dr. M. A. McDonald, on the 18th of May, 1917.

Resolved, That the Daviess County Medical Society has lost a faithful member; his family a devoted husband and father, and his community an honored citizen.

Resolved, That we tender our heartfelt sympathy to the bereaved loved ones, and commend them for comfort to Him who never forsakes those who put their trust in him.

Resolved, That a copy of these resolutions be sent to the bereaved family; a copy to the Ken-

tucky Medical Journal for publication, and that a copy be spread upon our minutes.

J. W. ELLIS,
W. H. STROTHER,
EDW. BARR,

Committee.

Franklin—The Franklin County Medical Society met in regular session October 9 at 7:30 P. M., with Dr. Wilson as host in his office, present, Drs. Dorsey, Coleman, Mastin, Montfort, Garrett, Wilson, Minish, Heilman, Williams and district nurse, Miss Allen.

The president and vice president being absent, J. W. Wilson was chosen president pro tem. The minutes of the previous meeting read and approved. Motion to reconsider the adoption of the scale of fees adopted at the last meeting was carried, after which and much discussion, the following scale was adopted and ordered printed for office use applicable to the City of Frankfort:

Official call and prescription, \$1.00; day visit, \$2.00; night visit, \$1.00 additional.

Night visit includes the hours between 9 P. M. and 7 A. M.

Obstetrics, minimum fee \$15.00; chemical urinary analysis, \$1.00.

An additional charge of 50 cents per mile for each mile outside the city limits which includes Thorn Hill.

Round Table discussion on "For What Is Constipation Responsible." Synopsis furnished by the secretary, discussed by all members present.

Next meeting to be held with Dr. Williams as host, it being his 84th birthday, the Round Table discussions will be confined exclusively to birthday felicitations, on November 6.

Vote of thanks was tendered Mrs. Wilson for her most elegant luncheon.

Adjourned.

U. V. WILLIAMS, Secretary.

Franklin—The Franklin County Medical Society met on Tuesday, November 6th at 7:30 P. M. Reading of minutes and routine business dispensed with. Social session with U. V. Williams as host, being his 84th birthday and the 63rd year of practice of medicine. Round Table was also dispensed with and the society was resolved into Birthday Felicitations.

More than fifty of his friends honored the occasion and as he had cast his bread upon the waters, it had returned to him Pound Cake, he served his friends with pound cake and eggnog and received many congratulations. The floral offerings were abundant and beautiful and he said he appreciated more the flowers while he lived than to have them presented after death had kissed his eyelids down to sleep.

U. V. WILLIAMS, Secretary.

Harrison—The Harrison County Medical Society met July 2, 1917, at Connersville, the guest

of Dr. R. W. Wood. The following members were present: Drs. Wells, Martin, N. W. Moore, Rees, Givens, Swinford, McDowell, Smiser, Righter, Best, W. B. Moore, Beckett, Midden, Wood, Morgan, McIlvain and Dr. David Wherrett, of Chicago.

Dr. Martin called the meeting to order. Minutes of the last meeting approved as read.

N. W. Moore reported a fatal case of pellagra. This case was discussed by Drs. Wood, Wells and McIlvain.

J. M. Rees reported case of Puerperal Eclampsia complicated by terrific post partum hemorrhage. Fischer's solution was administered intermuscularly and this was followed by large abscess patient finally recovered.

J. E. Wells reported case of Septicemia resulting in death from pyorrhea.

David Wherrett reported very interesting case of gunshot wound of the lung; attempt to remove bullet resulted in furious hemorrhage.

Josephus Martin read a paper on Malaria. Drs. Wells, Wood and N. W. Moore discussed this paper.

The essayist for the other paper being absent, the subject, "Anesthesia," was discussed by the members present.

This finished the regular program, when the members were invited to the dining room where a very excellent dinner was thoroughly appreciated by all present. This will be our last meeting with Dr. Wood as he will soon be called to the colors. Our society hopes for his safe return.

W. B. Moore, Secretary.

Jefferson—The 383 Stated Meeting of the Jefferson County Medical Society was held at the Louisville City Hospital, Monday September 24, 1917. The meeting was called to order at 8:30 P. M., by the president, G. S. Hanes.

No minutes were read.

Prof. Austin of the International Purity League announced that on the 8th of November, 1917, a convention of the League would be held at Macanley's Theatre and requested that he society send delegates to the convention.

On motion of V. E. Simpson, duly seconded, it was decided to have the president appoint a committee. President Hanes stating that the appointees would be declared later.

Thereupon President Hanes introduced Senator Hite Huffaker who spoke as follows regarding the new tax law of Kentucky.

President and Gentlemen of the Jefferson County Medical Society:

I wish to assure you that it is a great pleasure, and an honor, to have been invited here to discuss with you so important and so vital a subject as that of the revenue system of the State. I am not at all surprised that the men of so vitally interested in the physical welfare and development of the inhabitants of the community should likewise be interested in the financial welfare of

the community, and I feel more assured than ever before that with the medical fraternity taking such an interest in the administration of the tax laws, that they are more than ever sure of being a success and of working for the community the good which is expected of them.

In the first place, laws will not administer themselves, and, especially in the case of so vital and personal a thing as a tax law, it is absolutely necessary that the individual taxpayer be in sympathy with the enforcement of the law under which he lives. If such is not the case, conditions will continue like they have been for the last twenty-five years or more in the state of Kentucky. The individual taxpayer will return only that which he, in his own mind, feels like he should return, leaving the balance to be ferreted out by the much-despised and hated tax ferrets who have done so much to detract from the peace and financial welfare of our community. The unreasonable distribution of the burden of taxes in Kentucky is the one thing above everything else that has caused the law that we have been working under for the last quarter of a century to be a failure. It is absolutely necessary that the burden of taxes be equitably distributed between all the taxpayers so that each and everyone will pay what he should pay, and no more and no less, to the maintenance of his State and local governments. With this end in view, the special tax commission undertook to modify and re-arrange, in as simple form as possible, the old tax law and I assure you gentlemen that the re-arrangement had to be very simple, because there were one hundred and thirty-eight men in the Legislature, and each and everyone of them had to be educated on all these changes. So, while we realize that the laws that are now upon the statute books are far from being perfect, we hope they will, at least in a measure, give Kentucky what she has so long wished for and which she has so rightly deserved—that is, an equitable and a workable distribution of the burden of taxation. I will not go into the details here to-night, except to show you, as clearly and concisely as possible, just what the changes amount to.

Heretofore, there were one hundred and twenty county assessors, charged with the duty of listing and assessing the property in their various counties, for taxation. There was no central head to this organization. It had grown to be a fact among these 120 county assessors to see how low they could get their county assessed, so that their constituents would contribute as little as possible toward the maintenance of the State. In fact, I have heard many a county assessor brag about being an assessor for a pauper county—a thing over which we naturally would think they would be more inclined to hang their heads in shame. But it was a popular thing.

Now, the first important thing under the new laws was the creation of a central taxing head in the personelle of the State Tax Commission, with

supervisory powers over these 120 county assessors, with authority to order them to do what should be done, looking to the proper distribution of the burden of taxation. The State Tax Commission was given sweeping powers to examine books and accounts of persons, firms, or corporations, of any class or description, to the end that in the future, when this law has gotten in proper working order, there will be no dodging of taxes, but all will pay their just proportions.

After the creation of a central taxing body, with authority to supervise the assessors and see that the property was listed up for taxation and was really put upon the assessment rolls, it became necessary to place upon that property a reasonable burden of taxation, one that, when it was imposed, would not amount to confiscation. As you gentlemen well know, in the past, notes, bonds, stocks, accounts, mortgages, and money, if they were listed for taxation in the city of Louisville, were subject to a rate of \$2.69 on each \$100. This was not a livable tax; it amounted to little short of confiscation, and no one felt like imposing upon the taxpayer the duty of listing his property under such unfavorable conditions. So the Legislature, in its wisdom, saw fit to make the classes of property which I have just named, subject to State taxes only, in lieu of all other claims for taxes. So now, under the new law, notes, bonds, stocks, accounts, mortgages, and money, of all people residing anywhere in the State of Kentucky, are taxable, for State purposes only, at the rate of forty cents on the \$100 instead of the full city, county and state rates as heretofore. Money in bank is taxable at ten cents on the \$100, which tax the bank pays for the depositor.

These things, I assume, are quite interesting to the medical fraternity. We are all interested in the manufacturing and financial development of the community, and wish to promote especially the manufacturing development of the community after having raised the million dollar factory fund. To promote such interests it was provided that there should be exempted from all claims for local taxes the machinery, the raw material on hand at the plants, and the product in the course of manufacture, of all manufacturing institutions in the state of Kentucky, and those items were made taxable, for State purposes only, at the rate of 40 cents on the \$100, in lieu of all other taxes.

It was thought that this would encourage the manufacturing institutions of this state to enlarge, and induce others to come here and locate with us.

Now, in order to more or less satisfy the farmer after the millionaires of the cities had apparently received so much at the hands of the Legislature, it was determined that the farm machinery actually used on the farm should also be exempt from all taxes except state taxes at the rate of 40 cents on the \$100, and that the state rate on live stock be made only 10 cents on the \$100.

With these changes fixed in your mind, you have approximately gotten the new tax law. The pages on which the new law was written are few, but it is believed that it really will accomplish great good and most gratifying results. Already the people who are now holders of intangibles, such as stocks, bonds, notes, accounts, and money, and have heretofore failed to list them on account of the excessive rate, have made the most pleasing returns—really startling returns. People listing a few thousand dollars heretofore are now, I am told by the assessor, listing hundreds of thousand of dollars of those tangibles and it is hoped that it will go all over the state like it has gone in the city of Louisville.

Now, in order to get a forty cent rate for intangible property (which, by the way, is the highest charge that any state ever successfully operated under a law of this kind) it was necessary to reduce the State rate from 55 to 40 cents. The old State rate was 50 cents, with a five cent road tax, but the 40 cent rate now covers everything. This reduction created a great deficit in the State treasury. Last year the taxable property was \$1,100,000,000, so a 15 cent reduction in the State tax rate reduced the income \$1,650,000. Now, it is necessary to make this up in some way. It must be made up from the returns of intangible property which has heretofore paid nothing, or approximately nothing, toward the maintenance of the State. We cannot afford to make up this deficit by increasing the values of real estate, because real estate heretofore has practically stood the entire burden of taxation in the State, which is unreasonable, impracticable, and absolutely unfair. Other classes of property must contribute their share.

A great deal has been said about how local communities were going to secure the necessary revenue to run their governments; but upon a little investigation you will soon find that there are other classes of property besides intangibles that have in the past been listed at almost as ridiculously low a percentage. For instance, merchandise. All the merchandise in the city of Louisville last year which was listed for taxation was only six and a half million dollars, and I am reliably informed by both wholesale and retail merchants, and experts of that class, who are certainly in a position to know, that, if the truth were known, that there existed to-day in the city of Louisville an excess of one hundred million dollars worth of merchandise. We feel that, while the merchant should not be burdened, he should not request real estate owners and other property owners to stand as large a percentage of the burden of taxation as in the past, and allow him to escape with a valuation of five or six cents on the dollar. It is necessary for the merchants, therefore, to make a more reasonable and proper return of their merchandise for taxation. The city of Louisville, by reason of having relieved certain classes of property from local taxation, lost approximately eighteen million dollars worth of tax-

able property; but if merchandise is turned in at anything like what it should be turned in, the city of Louisville will be reimbursed for the eighteen million of dollars it has lost, and also given twenty or thirty million in addition, which will enable the city, not only to make necessary revenue, but to reduce its city tax rate five to ten cents on the hundred dollars and still have more money than it has ever had in the past; and I firmly believe that, with the assessors making the effort that they are to prove this law a success and to properly administer it, that we will find that instead of the city falling short, it will have all the money it wants and be able to reduce the tax rate.

Now, I think, for the purpose of bringing this matter to your attention, I have probably covered the vital points in the changes in the tax law. I know everyone has some problem more or less in their minds, which they have not been able to think about sufficiently to form a definite conclusion as to what would be the proper solution, and I feel, inasmuch as the doctors have been good enough to ask me to come here and try to help them understand this law, that after I have given you in this general way an idea of what we have tried to do, that it might be more beneficial to you, to endeavor as best I may to answer such questions as you may have to put.

By a Member: Are accounts standing on the books taxable?

Senator Huffaker: Accounts receivable are taxable, have always been taxable. Heretofore in the City of Louisville, for instance, they were taxable at forty cents on the hundred. The Tax Commission have issued a ruling, or at least indicated, that in the event accounts are not listed for taxation at at least seventy-five per cent. of their face value, that they will be inclined to think it is a very suspicious case and will investigate the matter as soon as they can get to it. I don't know that they meant to apply that particularly to doctor or lawyers, but was meant particularly to apply to mercantile institutions and manufacturing institutions, because it could hardly be conceived that a factory or business could be run with a greater loss ratio than one, or two or three per cent. at most. If their losses were ten, or fifteen, or twenty per cent., they certainly wouldn't last long before they would be thrown into bankruptcy. As far as doctors', and other professional men's accounts are concerned, I think that the only wise thing to do would be to charge off those things which it is realized must necessarily be charity cases, and out of which no return can be expected. If they are not charged off on September first, in order to save yourself from back taxes the thing for professional men to do is to list his accounts and designate the different classes. If he has accounts which amount to a given sum, which he knows are absolutely charity cases, I think that this September—when you list your property as of the first of this month—it would be well to list the lump sum of those charity accounts and then state that they

were charity accounts and worthless. That would relieve the taxpayer from any claim for back taxes whatsoever, or any penalties. If the Tax Commission were to investigate the case and find they did have a value, the most you would be liable for them would be forty cents on the hundred, not the heavy penalties, interests and costs which otherwise would have to be paid in case of failure to list.

By a Member: Does this law prevent suit for back taxes?

Sen. Huffaker: In order to make people feel safe and not to give them some justification for not listing their intangible property for taxation this year, it was provided that, if they listed it as of September first of this year they got what you might call an "immunity bath." In other words the back tax collector could not bring suit against the taxpayer for back taxes on any class of tangible property which he had heretofore failed to list, but which he listed as of September 1, 1917. If some such provision as that had not been made, the taxpayer could never have afforded to list his property now any more than in the past, because the tax ferret would go back on him for five years and collect \$2.69 on the hundred, with six per cent. interest, and twenty per cent. penalty, which would amount to practical confiscation.

By a Member: Suppose a man has stocks, bonds, and collateral not listed on the Louisville Stock Exchange, and also not listed on the New York Exchange? How are these people to determine the value of the stock?

Senator Huffaker: The value would be determined by whether or not the stock was a dividend-paying stock. If it paid no dividend, it would be solely within the conscience and judgment of the taxpayer as to what he would list it for; but if it paid a dividend, the best authorities seem to indicate that it should be capitalized on a six per cent. basis. In other words, if a stock pays six per cent, it would reasonably be worth right at par; and if it paid a lower per cent, the valuation would be reduced in proportion.

By a Member: Where you have stocks, for instance, listed on the New York Stock Exchange, where the stocks are not worth the listed price, but are more or less speculative, what about those?

Senator Huffaker: Where stock has a market value, it must be listed at its fair cash value proper and fair voluntary sale price is the price would bring at a fair, voluntary sale. So, if it is listed on the New York Stock Exchange, the proper and fair voluntary sale price is the price that it sells for on that day on the Exchange; and if it is listed on the Louisville Exchange the price it would bring at a fair and voluntary sale is the price for which it is quoted on the Louisville Exchange the first of September.

By a Member: How do they determine that a corporation which may be incorporated under the

laws of this State pays one-fourth of its taxes in this State?

Senator Huffaker: The burden is on the taxpayer to prove that. In very few instances is there any difficulty at all. The assessor has a list of shares of stock which were formerly not taxable but which, under this law are taxable, for the reason that, while they pay some taxes in Kentucky, they don't pay on at least twenty-five per cent of their property in Kentucky. It was necessary to put some arbitrary figure as to the amount of taxes that the corporation must pay in this State before their shareholders were relieved, on account of the unfortunate construction of the old law. The Court of Appeals held that if a corporation paid taxes on any property in the State of Kentucky, all its shareholders were non-taxable; and in one case—the Walsh case—it was held that, where a Company only had one per cent. of its property in the State of Kentucky, its shareholders were not taxable. This was not fair to other stockholders in the State, and, after discussing the matter, twenty-five per cent. was agreed upon as a reasonable amount on which to pay in the State in order to relieve their shareholders from taxation.

By a Member: Property that is listed this September you pay taxes on it this November?

Senator Huffaker: A year from this November; the equalization will not be completed until next Spring. The taxbills are then made out and delivered to the Sheriff, and next August he will send you a notice for the amount of taxes due on the assessment that you return this September.

By a Member: Is it necessary for us to itemize these accounts and state what each account is worth?

Senator Huffaker: No; just lump the accounts and state their fair cash value.

By a Member: What is the rule in regard to taxation of the stock of such institutions as the Fidelity Trust Company, various banks of Kentucky, the Life Insurance Companies, and Louisville Traction stock?

Senator Huffaker: Shares of banks have never been taxable in the hands of the individual shareholder, for the reason that bank shares are valued by the assessor formerly by the State Board of Assessment and Valuation and the taxes are charged against the bank. The bank pays for all stockholders, which naturally reduces the dividends that the stockholders get on their stock. In the case of the Louisville Railway Company, or the Kentucky Wagon Company, B. F. Avery Company, or any other Company you might mention here, whose property is entirely located within the State of Kentucky, the stock is not now, and never has been taxable in the hands of the individual holder.

By a Member: You do not have to list those things now?

Senator Huffaker: No, sir; it was never necessary. But a striking example of stock now tax-

able, but not heretofore, is Southern Pacific. Up to the present time their stock has been non-taxable, but it has not now twenty-five per cent. of its property in the State of Kentucky, therefore it is now a taxable stock. The American Tobacco Company stock has been non-taxable in the past; Liggett & Myers stock; American Telephone and Telegraph; Western Union; Chesapeake & Ohio; Illinois Central; Southern Railway; the Baltimore and Ohio, and so on, but now all are taxable. The Louisville and Nashville is non-taxable, as it has twenty-six or twenty-seven per cent. of its property located in Kentucky. Next year it may be taxed, because they may buy up some new railroads which would make their holdings in Kentucky less than twenty-five per cent of the total, in which event their shares would be taxable. But the burden is not sufficient to alarm the holder of stock, or the payer of taxes, because it is only taxable at forty cents on the hundred dollars.

By a Member: What is the ruling as to wearing apparel?

Senator Huffaker: That should be listed at what it would bring at a fair voluntary sale. Probably the reason for this item was, that heretofore taxpayers have failed to list wearing apparel, household furniture, jewelry, and such classes of property, at a reasonable valuation and have claimed their \$250 exemption on property which properly should bear a tax. Possibly the Tax Commission thought that, by going down to the intimate personal proposition of wearing apparel, they might bring home to the taxpayer the fact that he was dealing with a sure-enough, vital question between him and his State; it is up to him to say whether he is willing to contribute to the maintenance of his state. Then, too, in many instances, where the household furniture has not been listed at anything near a fair cash value, the wearing apparel may bring values up to a sufficient extent to make up his \$250 and prevent that exemption being claimed on other property which in right and justice should be taxed.

By a Member: Is the county tax included in the forty cents?

Senator Huffaker: No; the county tax is in addition to that, as it has always been. Heretofore the State rate was fifty-five cents, the county twenty-nine, the city \$1.85.

By a Member: If an account remains unpaid for several years is it to be listed each year?

Senator Huffaker: Yes, unless it is checked off the books as worthless. However, this would not be a great burden, as the tax is only forty cents on the hundred, or four mills on the dollar. The individual taxpayer must decide for himself, however, as to the value of any given account or accounts.

By a Member: What is the ruling in regard to back taxes?

Senator Huffaker: In the future, after we have gone ten years—that is, in 1927 and there-

after—the State can go back ten years and collect back taxes due, with one hundred and twenty-per cent penalty and six per cent interest. If you make a complete list of your holdings as of September first of this year, the State cannot come back on you for taxes on property not listed in the past. This provision was necessary in order to protect from the tax ferret the taxpayer who is desirous of listing all his property at a fair valuation.

By a Member: I would like to have an expression of opinion as to the turning in of instruments, books, automobiles, and things of that kind.

Senator Huffaker: The automobile question has been settled. There will be allowed a twenty-five per cent deduction on the value the first year, fifty per cent the second, and sixty or sixty-five per cent (I am not certain which) the third. The assessor will tell you when you go there. That applies on everything except Fords. They say the Ford is like a mule: whenever you can sell one at all, you can sell it practically for full valuation. There will be allowed a ten per cent. per year deduction on Fords.

By a Member: What about the tax on surgical instruments and books?

Senator Huffaker: I put in my library 594 volumes—at \$1010. Of course I could not replace them for less than double that sum at the very least; but I doubt if I could sell them for that sum.

By a Member: Our books are obsolete in three years.

Senator Huffaker: Some law books are, too. If my library consisted of text books, in a very short time they would become obsolete. That is the case with doctors' libraries, I imagine. A physician would have to determine for himself the reasonable value of his library.

As to surgical instruments, I have had no experience at all and do not know what kind of valuation could be put on them, either new or secondhand. But the law never contemplates, nor do the authorities contemplate, being unreasonable or unfair to the taxpayer. That, too, must be left to you, for no one except an expert could place a proper valuation on your instruments.

On motion of Dr. Leon Solomon, duly seconded, a rising vote of thanks was given to Senator Huffaker.

Jefferson—The Jefferson County Medical Society was called to order by the President pro tem, Dr. Elmer Henderson, at 8:30 P. M., on Monday evening, October 15, 1917.

Minutes of previous meeting were read and approved.

R. B. Gilbert, a member of the Council of the City of Louisville, reported to the society concerning a proposed ordinance requiring physicians to report to the Health Officers of the city the names of all female patients suffering from

venereal disease. Dr. Gilbert also reported two suggested amendments to this ordinance (copy attached hereto). On motion of **Bernard O'Connor**, duly seconded, it was declared to be the consensus of the society that it be considered wise to postpone the enactment of the law for the time being.

Thereupon the Secretary announced to the society that on the following Monday evening, October 22, 1917, F. M. Pottinger, of California, would speak on the subject of "Important Advances in the Diagnosis and Treatment of Pulmonary Tuberculosis."

Thereafter, it being reported that there was \$876 balance in the treasury and that \$276 would probably be sufficient to pay expenses of the society for the remainder of the year, it was decided, on motion of Dr. Owen, duly seconded, to invest \$400 of the treasury balance in Liberty Bonds of \$100 denomination, same to be purchased by the Secretary and deposited with the bank for safekeeping. This purchase to be O. K.'d by the Executive Committee, according to the rules of the society.

CLINICAL CASES.

Wm. Sanders read a paper on "Ante-Partum Hemorrhage, Complicated by Gas Bacillus Infection and Plegmasia Alba Dolens." Discussed by Edward Speidel, E. C. Underwood, V. E. Simpson, closed by Dr. Sanders.

I. A. Lederman read a paper on "Recurrent Laryngeal Paralysis from Aortic Aneurysm." Discussion by D. Y. Keith, (with showing of plates), S. G. Dabney, A. O. Pfingst, and G. C. Hall, and closed by Dr. Lederman.

ESSAY.

C. T. Wolfe read a paper on "The Eye as An Index in Certain Diseases," (Bright's disease, Diabetes, Nephritis, and Arterio-Sclerosis). Discussion by Drs. Dabney, Hall, A. O. Pfingst, I. A. Lederman, and C. G. Forsee. Closed by Dr. C. T. Wolfe.

There being no further business before the society, the meeting adjourned.

J. HAMILTON LONG, Secretary.

Tri-County—A Tri-County Medical Society composed of Barren, Hart and Metcalf counties, was organized in Glasgow, October 26, 1917.

The following doctors were present: Botts, Ferguson, Taylor, Turner, Comstalk, Miller, Porter, Howard, Palmore, Honaker, Turner, Acton, Richards, Jones, Smock, Edwards.

The following was the temporary organization which was afterwards made permanent: J. Morgan Taylor, President; S. J. Smock, Secretary. The president appointed the following committee, Howard, Comstock and Wells, to arrange a program and time of meeting. The first meeting will be held at Horse Cave.

S. J. SMOCK, Secretary.

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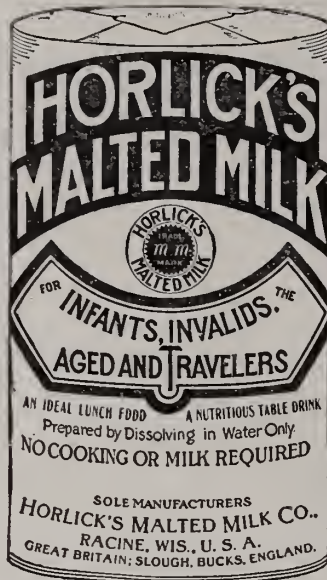
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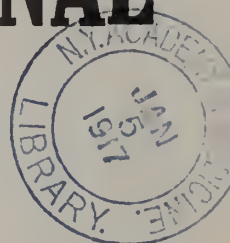
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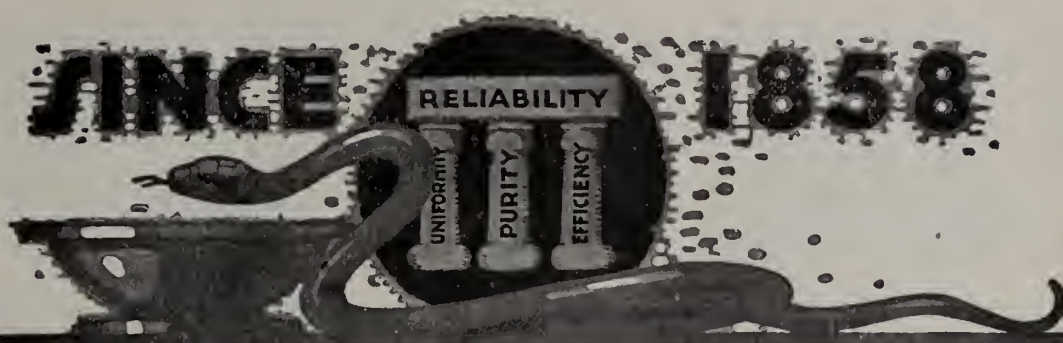
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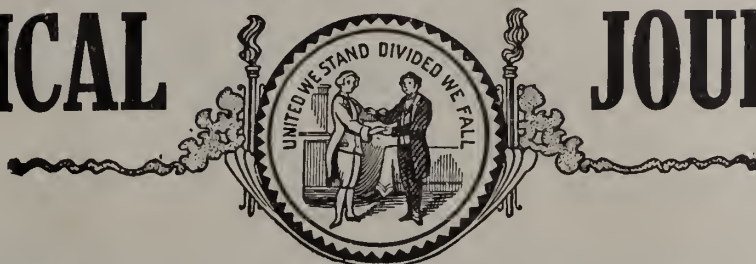
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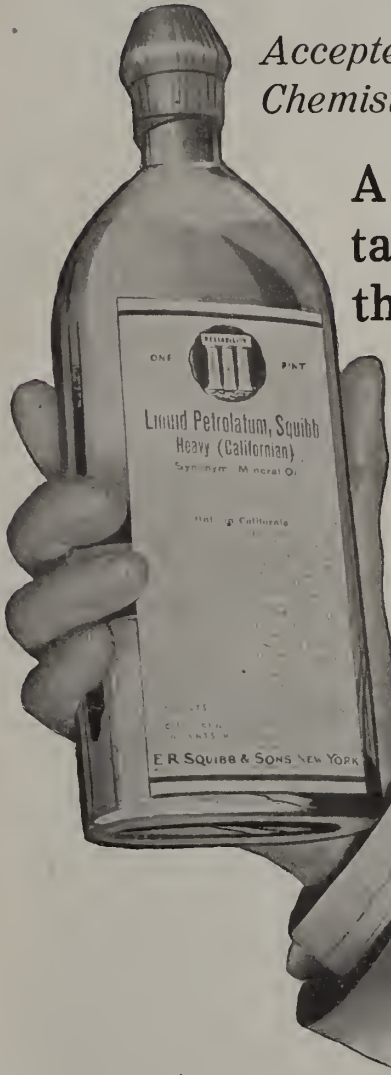
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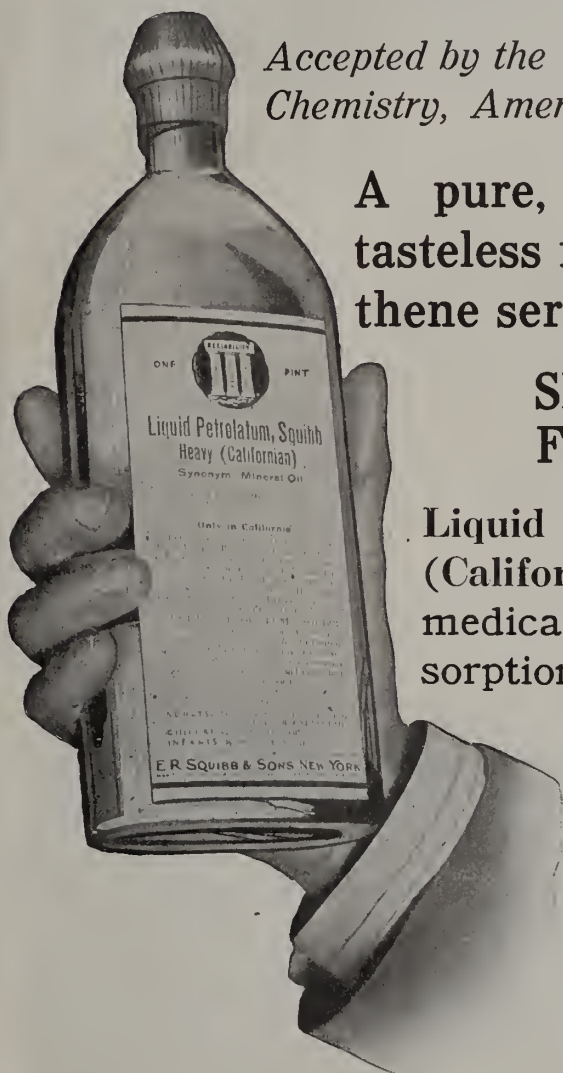
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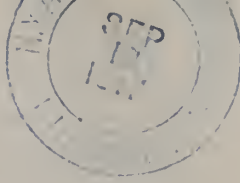
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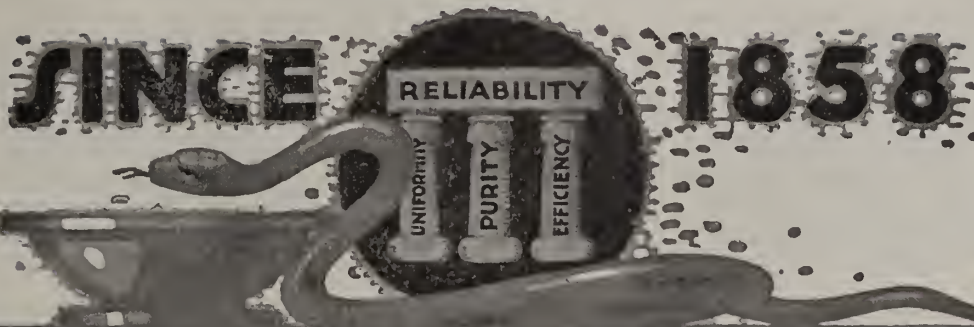
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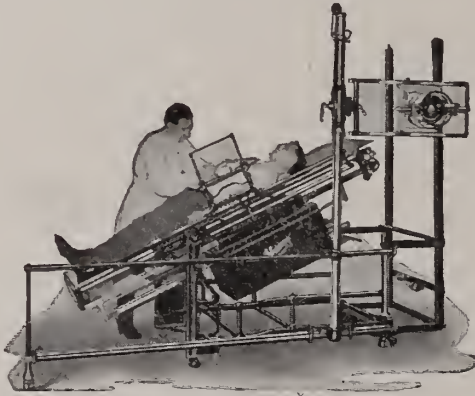
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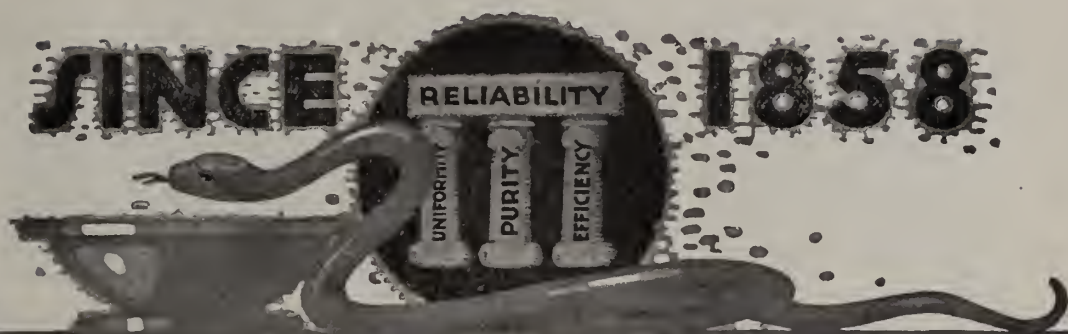
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KENTUCKY

MEDICAL JOURNAL



Being the Journal of the Kentucky State Medical Association

Published Semi-Monthly under Supervision of the Council

Editorial and Business Office, Corner State and Twelfth Streets.

Subscription Price, \$2.00

Entered as second-class matter, Oct. 22, 1906. at the Postoffice at Bowling Green, Ky., under the act of Congress, March 3, 1879

VOL XV.

BOWLING GREEN, KY., NOVEMBER 1, 1917

No. 11

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brilliant green	tolamine
chloramine-T	trench back
chlorazene	trench foot
flavine	trypaflavine

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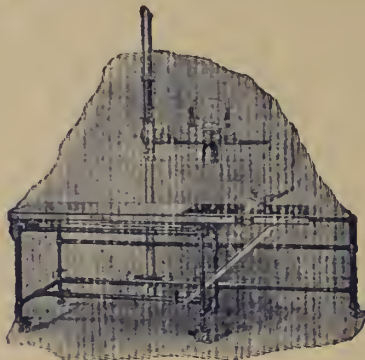
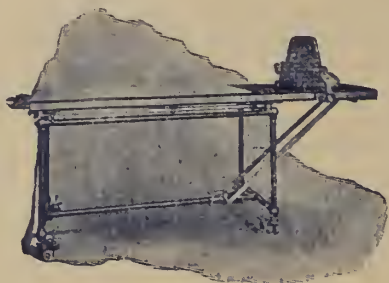
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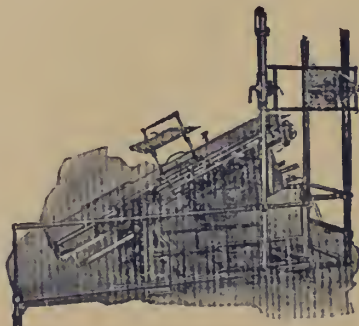
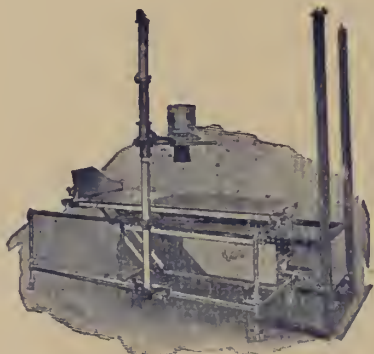
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VOL. XV.

BOWLING GREEN, KY., DECEMBER 1, 1917

No. 12

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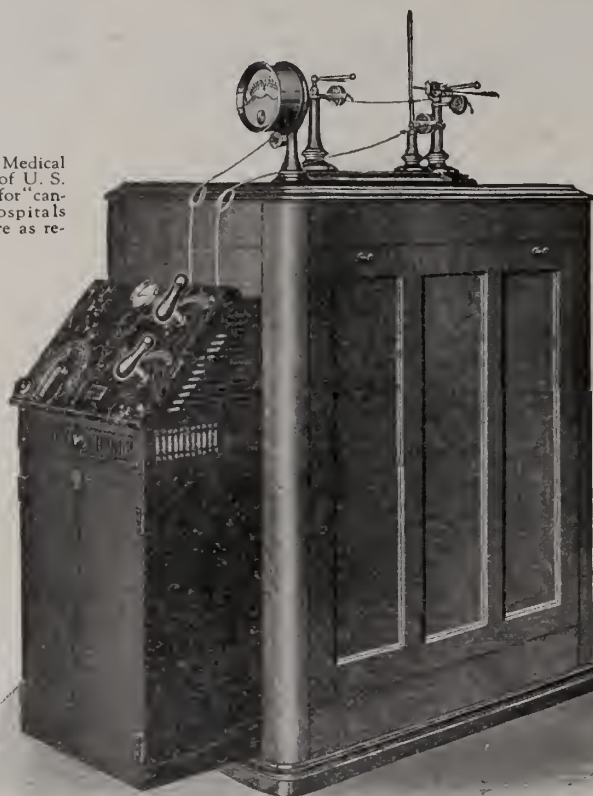
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COUNTY	SECRETARY	RESIDENCE	DATE
Adair	R. Y. Hindman	Columbia	December 5
Allen	H. M. Meredith	Scottsville	December 22
Anderson	J. W. Gilbert	Lawrenceburg	December 2
Ballard	Rob C. Overby	La Center	December 11
Barren	J. M. Taylor	Glasgow	December 19
Bath	H. J. Daily	Owingsville	December 10
Bell	O. P. Nuckols	Pineville	December 14
Boone	Ivan E. Carlyle	Grant	December 19
Bourbon	Jas. A. Orr	Paris	December 20
Boyd	J. M. Pichard	Ashland	December 3, 24
Boyle	F. H. Montgomery	Danville	December 11
Breathitt	O. H. Swango	Jackson	December 6
Breckinridge	J. E. Kincheloe	Hardinsburg	December 12
Bullitt	R. L. Hackworth	Brooks	December 10
Butler	J. H. Austin	Morgantown	December 5
Caldwell	W. L. Cash	Princeton	December 11
Calloway	W. G. Graves	Murray	December 12
Campbell Kenton	F. A. Stine	Newport	December 20
Carlisle	W. Z. Jackson	Arlington	December 3
Carroll	F. M. Gaines	Carrollton	December 11
Carter	G. B. O'Roark	Grayson	December 11
Casey	Wm. J. Sweeney	Liberty	December 27
Christian	J. W. Harned	Hopkinsville	December 18
Clark	W. Carl Grant	Winchester	December 21
Clinton	S. F. Stephenson	Albany	December 15
Crittenden	C. G. Moreland	Marion	December 10
Cumberland	W. F. Owsley	Burkesville	December 5
Daviess	J. J. Rodman	Owensboro	December 18
Estill	G. A. Embry	Irvine	December 12
Fayette	L. C. Redmon	Lexington	December 11
Fleming	J. B. O'Bannon	Flemingsburg R. F. D. No. 4	December 19
Floyd	M. V. Wicker	Garrett	December 14
Franklin	U. V. Williams	Frankfort	December 4
Fulton	Seldon Cohn	Fulton	December 12
Gallatin	J. M. Stallard	Sparta	December 20
Garrard	J. B. Kinnaird	Lancaster	December 20
Grant	J. G. Renaker	Dry Ridge	December 19
Graves	H. H. Hunt	Mayfield	December 5
Grayson	C. L. Sherman	Millwood	December 27
Greenup	C. E. Vidd	Russell	December 6
Hardin	W. F. Alvey	Elizabethtown	December 13
Harlan	Chas. V. Stark	Evarts	December 29
Harrison	W. B. Moore	Cynthiana	December 3
Hart	C. H. Moore	Canmer	December 4
Henderson	Wm. B. Negley	Henderson	December 10, 24
Henry	W. B. Oldham	Newcastle	December 31
Hickman	Charles Hunt	Clinton	December 6
Hopkins	A. O. Sisk	Earlington	December 6
Jackson	G. C. Goodman	Welchburg	December 5
Jefferson	W. Hamilton Long	Louisville	Every Monday Evening
Jessamine	J. A. VanArsdall	Nicholasville	December 20
Johnson	J. P. Wells	Paintsville	December 29
Kuett			December 22
Knox	C. L. Heath	Lindsay	December 21
Larue	W. E. Rodman	Hodgenville	December 20
Laurel	Oscar D. Brock	London	December 19
Lawrence	L. S. Hayes	Charley	December 17
Lee	A. B. Hoskins	Beattyville	December 8
Leslie			December 26
Letcher	Bert C. Bach	Whitesburg	December 28
Lewis	H. M. Bertram	Vanceburg	December 17
Lincoln	D. B. Southard	Stanford	December 21
Livingston	Edward Davenport	Hampton	December 19
Logan	Walter Byrne, Jr.	Russellville	December 3
Lyon	L. P. Molloy	Kuttawa	December 18
McCracken	W. H. Parsons	Paducah	December 12, 26
McCreary	Robert Sievers	Pine Knot	December 11
McLean	W. W. Spicer	Calhoun	December 13
Madison	Murison Dunn	Richmond	December 13
Magoffin	M. M. Price	Salyersville	December 1
Marion	C. B. Kobert	Lebanon	December 18
Marshall	L. L. Washburn	Benton	December 19
Mason	G. L. Howard	Maysville	Every Wednesday Evening
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Menifee	J. M. Kash	Frenchburg	
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Montgomery	J. F. Jones	Mount Sterling	December 11
Morgan	W. H. Wheeler	West Liberty	December 10
Muhlenberg	Clarence Woodburn	Central City	December 26
Nelson	Hugh D. Rodman	Bardstown	December 19
Nicholas	B. F. Reynolds	Carlisle	December 17
Ohio	Oscar Allen	Cromwell	December 5
Oldham	R. B. Cassady	La Grange	December 6
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Perry	M. E. Combs	Hazard	December 10
Pike	W. J. Walters	Pikeville	December 3
Powell	I. W. Johnson	Stanton	December 3
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Robertson	Alton U. Wells	Mount Olivet	December 17
Rockcastle	Lee Chestnut	Mount Vernon	December 13
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Russell	J. B. Scholl	Jabez	December 10
Scott	H. V. Johnson	Georgetown	December 6
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Spencer	E. C. Wood	Wakefield	December 17
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Trimble	F. W. Hancock	Bedford	December 3
Trigg	J. L. Hopson	Cadiz	December 26
Union	S. L. Henry	Morganfield	December 5
Warren	W. P. Drake	Bowling Green	December 12
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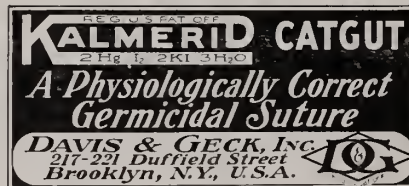
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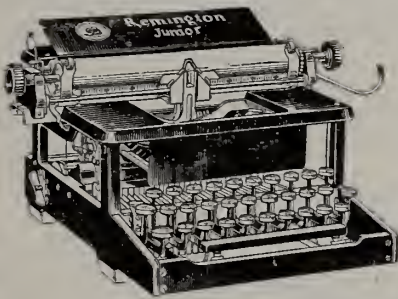
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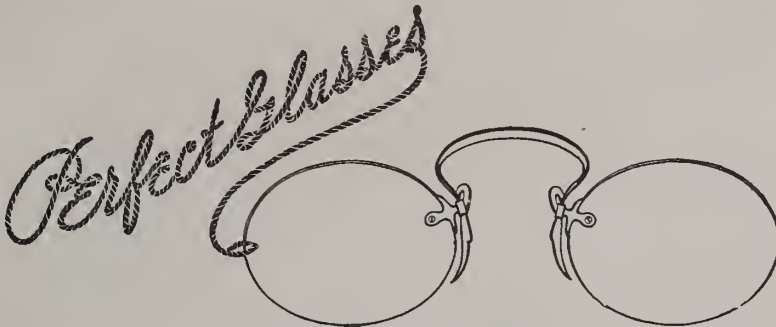
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The Roentgen Diagnosis of Diseases of the Alimentary Canal.—By Russell D. Carman, M. D., Head of Section on Roentgenology, Division of Medicine, Mayo Clinic and Albert Miller, M. D., First Assistant in Roentgenology at the Mayo Clinic. Octavo of 558 pages with 504 original illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth \$6.00 net; Half Morocco \$7.50 net.

The authors have purposely avoided extensive descriptions of apparatus since this subject has been rather fully dealt with in several comprehensive publications. On the other hand they have given detailed protocols of the findings in a considerable number of cases. The book is profusely illustrated and is an invaluable aid and guide to workers in roentgenology.

A Manual of Nervous Diseases.—By Irving J. Spear, M. D., Professor of Neurology at the University of Maryland, Baltimore. 12mo of 660 pages with 169 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, \$2.75 net.

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